



SMI CSR**M**

Centre for Social
Responsibility in Mining

SOCIAL ASPECTS OF THE CLOSURE OF CENTURY MINE

Social Impact Assessment STAGE 2

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Cover photo: Summer Yanner (Environmental Trainee) and Bryan Grant (Environmental Officer) on the South Waste Rock Dump horizontal surface which was rehabilitated in late 2010 (courtesy MMG-Century).

Centre for Social Responsibility in Mining

The Centre for Social Responsibility in Mining (CSRSM) is a leading research centre, committed to improving the social performance of the resources industry globally. It is part of the Sustainable Minerals Institute (SMI) at the University of Queensland, one of Australia's premier universities. SMI has a track record of working to understand and apply the principles of sustainable development within the global resources industry. CSRSM's focus is on the social, economic and political challenges that occur when change is brought about by resource extraction and development.

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Disclaimer

This Report builds on four more detailed Reports produced in early 2013 and available at:

https://www.csrsm.uq.edu.au/publications?pub_type=&pub_search_authors=&pub_search_keyword=Century&search=publications&task=search It reviews Century Mine's socio-economic impacts on the Lower Gulf Region and notes considerations for the future in the context of the impact of changes associated with the impending end of zinc production and staged closure of the Mine. Above all, it aims to capture the ideas expressed during CSRSM's 2012 fieldwork about how the cooperative spirit of employees, Native Title Groups (NTGs) and residents of the Gulf communities can be harnessed to ensure a positive and lasting legacy to the social, economic and institutional development of the communities in which the Mine has operated for over 15 years and note some opportunities for the long 'caring for country' stage ahead.

While the Report has been prepared with care, the University of Queensland and participating researchers and research centres have relied on publicly available information, information volunteered from key regional stakeholders and especially information from MMG-Century and the community consultations. It was not possible to verify the accuracy or completeness of the information and accordingly we can accept no responsibility for any errors or omissions in the information and no liability for any decisions or actions taken by individuals or organisations on the basis of this document. Funding support, research cooperation and information from the mining company and other parties do not imply their endorsement of, or influence on, the views expressed herein.

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Executive Summary

MMG have commenced planning for the cessation of mineral production at Century and eventual closure of the mine. It is anticipated that open pit production and shipping of zinc will cease in 2015.

This assessment of the social impacts of closure of Century Mine uses a five capitals framework to examine the impact of socio-economic changes that have occurred in the Lower Gulf Region during the life of the mine and further changes that are likely as closure-related measures are implemented. The five forms of capital considered are: economic, physical (or man-made), natural, human and social. These broadly align with the Goals and Aspirations that Native Title Groups expressed for the region in the Gulf Communities Agreement negotiated at the outset of the project.

The Lower Gulf Region pre-Century Mine

Despite an abundance of natural and cultural assets, the economy of the Lower Gulf Region was very limited in the 1990s with mainly seasonal employment and the Indigenous population almost totally dependent on welfare. Transport and communications infrastructure was basic and the majority of land was controlled by non-Aboriginal pastoralists, State Government or mining companies. Health and education standards were below State and national levels and there were family and social problems among the historically marginalised Aboriginal population.

Century as a platform for change

Century Mine has been the largest single generator of economic activity in the Lower Gulf Region. In the last 16 years, many changes have been a direct or indirect result of the Century project. The mine has provided: stable, well-paid employment opportunities and increased personal incomes for employees and their families; business for supply chain companies; establishment of new businesses in the region; and payment of royalties, rates and charges that can be channelled to regional infrastructure development and economic advancement. In addition, the presence of the mine has created or contributed to additional infrastructure, such as the sealed roads, improved telecommunications, new port facilities in Karumba and all-weather airstrips. The main negative impacts of the operation have been land disturbance, damage to some cultural heritage and the environmental footprint of the mine, pipeline and loading facilities.

Economic impacts (economic capital)

Under the GCA, Century provides annual contributions to Aboriginal Development Benefits Trust for Aboriginal business development and annual compensation payments to Native Title Groups through the Gulf Aboriginal Development Corporation for 20 years. Another significant addition to economic assets has been the wages paid by Century and its contractors to Gulf-based residents. For instance, Century paid \$8.8m in 2012 to employees residing in the four Lower Gulf Shires and the value of the mine's contracts with Gulf-based suppliers totalled \$62.8m from 2008-2012.

Impacts on infrastructure (physical capital)

The buildings, infrastructure and machinery that make up the physical assets of the region have been significantly enhanced over the past 16 years. For instance there are now better regional road and air transport networks for freight, trade, passenger, emergency and community travel. Some of this development was directly linked to the Century Project. Such additions have sometimes had wider benefits for example improving emergency services in the region and supporting other industries.

Impacts on land and environment (natural capital)

Native Title Groups have achieved increased access to country in the Lower Gulf with both Century and the State Government assisting them to gain control of pastoral holdings, grants of land and Native Title determinations. Perhaps most significant is Lawn Hill and Riversleigh Pastoral Holding Company (LHRPHC) which is 51% controlled by the Waanyi Peoples and has been an important land manager and pastoral operation. However mining also disrupts the environment and there are over 2,500 ha of disturbed land (within the 23,350 ha lease and pipeline) to rehabilitate or stabilise, a proportion of which (waste rock dumps, tailings facilities and the pit) may be permanently affected.

Impacts on skills, education, and health of Gulf residents (human capital)

Century's main contribution to the region's human capital has been through increasing the work experience, skills, training and employability of more than 900 members of the Native Title Groups and local Aboriginal population of the Lower Gulf communities who have been employed at the mine. Century has had an annual intake of apprentices and trainees and many people in community leadership positions have, at some stage worked at Century or received training there. Working at Century has a positive impact on employees' health and Century flights have improved community members' access to healthcare and medical treatment.

Impacts on social and institutional assets (social capital)

Century has assisted regional organisations in their operations and sponsored community programs and cultural activities. Funds controlled by Native Title Groups by virtue of the GCA have been used to re-vitalise aspects of Aboriginal culture and heritage. There are some strong Aboriginal organisations in the region though they often struggle to get funding. Some bodies established as a consequence of the GCA have functioned intermittently and without a unified community constituency or robust and transparent processes.

Looking Ahead to Completion of Production and Closure

Many of Century's local Aboriginal employees have an incomplete understanding of completion of mining and closure timelines and processes. Most respondents believed that closure will have a negative impact on them and their families particularly for those who lose their employment and face associated financial hardships. There is considerable uncertainty among employees and they have a range of concerns about their future and the impacts of the transition to closure.

Community members and community organisations want to be informed and consulted about closure options and closure timelines. Community expectations, priorities and concerns with respect to closure exhibit both pessimism and a strong motivation to engage with Century in future years to deliver sustainable and positive legacies for the region. The immediate priorities from the community perspective revolve around addressing the future of those employed at Century and the possible effects on community infrastructure and services. They want to see a substantial role for locals and Native Title Groups in the rehabilitation works. The potential gap left by the reduction or cessation of Century flights and the keen interest in future use of infrastructure particularly Darimah Village are other prominent concerns across the communities.

Aside from external legally binding requirements under the Environmental Authority for the mining lease, MMG-Century has a number of formal commitments under the GCA that stakeholders expect will be fulfilled by completion. There are specific clauses of the GCA not yet implemented and, as well, a number of voluntary, informal and closure-specific commitments that have raised expectations and need to be clarified. Besides meeting formal commitments under the GCA and other obligations to the Government as regulator and to personnel as a responsible employer, MMG

has made voluntary commitments to the 10 Principles of Sustainable Development adopted by the International Council on Mining and Metals (ICMM) which is a membership organisation bringing together 21 of the world's largest mining and metals companies as well as 33 global, national and regional mining associations.

Amongst other things these principles emphasise the importance of ongoing engagement with impacted communities, including in the transition to closure, and the need to ensure community ownership of post-closure goals.

The Impact of Completion of Production and Mine Closure

The ramifications of closure will be felt throughout North Queensland since the mine is connected in various ways with Townsville, Mount Isa and Cairns for instance. However it is the less populated, less diversified and less prosperous region in the Lower Gulf itself that will be most affected with a disproportionate effect on local Aboriginal people.

Possible changes include: increased unemployment and welfare dependence; decreased economic activity; reduced funding to community development programs; deterioration of community infrastructure and local facilities; demographic changes in towns; reduced household incomes; declining enrolments in local school; fewer education and training options; increased demands on community organisations and local social services and rising costs of essential services (e.g. fuel, power, telecommunications and water); and a shift in available employment opportunities to tourism, services, government and cattle grazing.

Sustainable legacy opportunities

Many individuals and a number of businesses have benefitted from the mine, and probably half a billion dollars has been injected into the regional economy as a result of the project. Despite this, the Lower Gulf Region remains under-developed in many respects. This situation will be compounded when production ceases as most jobs associated with the mine will disappear, revenue flows to local government will be reduced, some infrastructure (such as the airport at Lawn Hill or the power line) may be decommissioned, and some services (such as free and subsidized flights) cease.

The remaining years of production and the ensuing period of active closure provide one last opportunity to secure the foundations for future regional development. However, for this opportunity to be realized, a collaborative and coordinated process is required involving a more strategic approach to social investment by the company, better aligned government programs, improved community governance and more effective representative bodies.

Mitigating the direct negative impacts of closure – especially on employees and supplier businesses – will involve retraining, job-placement assistance and efforts to maximise the role of local Aboriginal people in any new work roles associated with the transition to closure including rehabilitation. At the regional level, the focus needs to be on working with partner organisations to plan and implement integrated activities that harness the region's assets and simultaneously provide economic benefits, maintain local infrastructure, care for the natural environment and improve local communities and institutions.

Planning and managing for closure

The social component of the mine closure plan should work from the current state of the region as outlined in this report and adopt a staged approach. During the closure phase of a mine's life-cycle the Environment function and the Community Relations function become particularly important.

With some urgency, given the timelines, closure planning should prioritise the following recommendations and develop them into mature action plans for implementation.

Recommendations

The following recommendations are directed primarily to MMG, as the organisation that commissioned this study. However, where appropriate we have also included some recommendations that include, or are directed to, the State Government – particularly in relation to broader issues around the development of the Lower Gulf following the cessation of production from the Century open pit.

Enhancing Century's contribution to Aboriginal Workforce Participation

Recommendation 1: Redirect employment, training and career planning

Objectives:

(i) a suitably skilled workforce is retained throughout the transition to closure;

(ii) there are skilled people in the communities with a range of relevant competencies (including construction and building maintenance, trades, road construction);

(iii) a breadth of future employment and career options are available for current employees and other residents of the Lower Gulf Region.

(iv) employees who wish to continue working in mining are supported to build on their experience at Century to advance that career path

Key proposed actions:

Transitioning the Century workforce

MMG to:

- **Prioritise GCA employees with proven skills and aptitude for post-production jobs and specific roles needed during transition to closure, especially rehabilitation and environmental management, and, where necessary, help equip workers for these new roles.**
- **Broaden occupational experience and training for GCA employees, including by providing 'tickets', to ensure they develop transferable skills and are job-ready for positions in mining but also a range of other fields appropriate to the regional economy.**
- **Provide career planning, life-skills, financial management and adjustment support to GCA employees who are likely to face changed employment circumstances.**
- **Target promising GCA employees for supervisor and manager training and career advancement.**
- **Ensure that any contracts that are let in relation to mine closure and rehabilitation include a requirement that hiring preference be given to current Century employees and local Indigenous people more generally.**
- **Work with Remote Jobs and Communities Program (RJCP) providers to facilitate relevant community-based training for former employees and to replace mine pre-vocational traineeships.**

Strengthening the regional workforce

- **MMG, State Government, and regional vocational training providers, to work together, in consultation with Native Title Groups (through CETC), to establish revitalised and realigned vocational training programs. These programs should:**
 - **Provide participants with skills training and especially ‘tickets’ and qualifications that increase employability and are aligned with regional workforce needs**
 - **Link with mainstream education and training in the Lower Gulf and broader initiatives to boost Indigenous work-readiness and open diverse future career paths**
 - **Aim to build a new skill base in the region focused on rehabilitation and land management on the one hand and service industries on the other especially human services, trades and maintenance services and tourism services.**

Enhancing Century’s contribution to Aboriginal business participation and economic development in the Lower Gulf

Recommendation 2: Collaborate to support existing local businesses and facilitate business incubation

Objective: Existing local businesses are assisted to transition to the post –production phase and new opportunities are created in the region for viable and self-sufficient businesses.

Key proposed actions:

MMG to:

- **Work with ADBT and other organisations, such as Indigenous Business Australia (IBA) and Enterprise Connect, to provide transition support for locally based businesses which are currently wholly or partly dependent on the mine.**
- **Seek to maximise the involvement of local businesses in closure-related work at Century and Karumba. Specific actions that can be taken to further this objective are:**
 - **Initiate a review of work requirements around mine closure, rehabilitation and ongoing monitoring to identify potential opportunities for local contractors and suppliers and for local indigenous businesses in particular.**
 - **Conduct a scan to identify local businesses that may be in a position to undertake this work and communicate these opportunities to the organisations concerned.**
 - **Link interested businesses with organisations that may be able to provide support and advice in accessing identified opportunities; for example, ADBT, IBA and Enterprise Connect.**
 - **In assessing tenders, give a weighting to locally-based businesses (subject to them meeting core tender requirements)**
- **Work with ADBT to ensure that it remains a viable entity beyond the completion of mining**
- **Participate actively in initiatives to support the development of longer term business opportunities in the region, such as the North West Queensland Indigenous Resource Industry Initiative (NWQIRII), regional economic development planning and initiatives of**

Gulf Savannah Development and the Mount Isa Townsville Economic Zone's (MITEZ) North-West Regional Strategic Planning.

- Fund an organisation with expertise in business facilitation in remote or Indigenous communities (such as the Sirolli Institute or RSM Bird Cameron) to conduct community workshops and provide follow-up support.
- Work with LHRPHC to consolidate the pastoral business and develop a diversification strategy for the pastoral holding, using programs for Indigenous business facilitation as a possible source of development funds. There is potential for multiple strands: a profitable pastoral enterprise with other economic and employment functions (e.g. tourism) as well as other benefits to the Waanyi Native Title Group from their lands including cultural maintenance, environmental stewardship and possibly training programs.

Enhancing Century's contribution to regional environmental management

Recommendation 3: Lay foundations for long-term environmental stewardship

Objective: Strong community involvement in caring for a rehabilitated and healthy environment.

Key proposed actions:

MMG to:

- Ensure the Century Environment Committee (CEC) is maintained as a suitably resourced and well-functioning forum and has the capacity to engage effectively with rehabilitation, caring for country and other environmental monitoring tasks. If the CETC is disbanded at the end of production (as signalled in the GCA) the CEC's role will need to be expanded to include facilitation of local employment in rehabilitation, care and maintenance work.
- Through the CEC and other means, actively engage Aboriginal people with traditional responsibility for the area of the mine site in the development of closure criteria and rehabilitation design and activities.
- Participate in and liaise with regional land and environmental management programs that involve Aboriginal people in management and use of their traditional country, with a view to identifying opportunities to extend some of these programs to the mine lease and surrounding areas. Relevant programs might include those managed by North Australian Indigenous Land and Sea Management Alliance (NAILSMA), Carpentaria Land Council Aboriginal Corporation (CLCAC), Southern Gulf Catchments and the National Parks and Wildlife Service.
- In liaison with established Ranger programs, build a team of GCA employees with environmental management skills relevant to rehabilitation work, caring for country and cultural heritage protection. The initial focus of this team would be managing issues associated with the closing of the mine, but in the longer term there may be opportunities to offer services on a commercial basis to meet the broader land management needs of national parks and pastoral companies in the region.

The State Government to:

- Support training and mentoring to prepare Waanyi for joint management of Boodjamulla National Park.

Enhancing Century's contribution to cultural appreciation

Recommendation 4: Support maintenance of culture

Objective: Cultural heritage considerations integrated into all closure-related operations and maintenance of the vibrant Aboriginal cultures of the Lower Gulf Region.

Key proposed actions:

MMG to:

- Continue with efforts to establish a 'Keeping Place' for cultural artefacts and traditional knowledge. This will require:
 - resolving with the Waanyi Native Title Groups a suitable site for the 'Keeping Place';
 - developing agreed plans for the form and function of the 'Keeping Place'; and
 - constructing the centre (preferably using local Indigenous contractors) with funds already earmarked for this purpose.

The Keeping Place could also offer some commercial opportunities including tourism.

- Support current providers of internal cultural awareness training at Century to develop the capacity to service on a commercial basis a wider client base (e.g. other companies, government).

Enhancing Century's community relations

Recommendation 5: Proactively communicate and engage with diverse stakeholders

Objective: Engaged and well-informed stakeholders who are kept up-to-date with open and informative communication and who identify with post-mining goals and are engaged in shaping the post-mining future of the region.

Key proposed actions:

MMG to:

- Develop a communications strategy for providing regular, timely, and informative updates to the workforce and various stakeholder groups in the community on aspects of current operations, developments and potential scenarios that are relevant to them.
- Ensure that, in formulating action plans and taking decisions on important issues (e.g. about post-mining forms and functions of land and infrastructure) it canvasses options widely and consults in advance with stakeholders about the pros and cons of each option, rather than waiting until firm decisions have been made and definitive answers can be provided.
- Use a range of participatory techniques (stakeholder mapping, community monitoring etc) to involve local Aboriginal people and other relevant regional stakeholders in planning, implementing and monitoring the progress towards closure goals and the implementation of Action Plans being developed by MMG-Century and other bodies – notably those involved in response to the GCA 15-year Review. Empower these stakeholders to take action on initiatives in partnership with, as well as independent of, the company.
- Maintain and build capacity within the Community and Stakeholder Partnerships (CSP) team to manage processes of stakeholder engagement that will be needed throughout the post-production period.

Note: useful tools and guidelines for these actions are referenced in **Appendix 9**.

Enhancing Century's contribution to regional infrastructure

Recommendation 6: Help secure community infrastructure for the future

Objective: A well-serviced community with adequate and well-maintained infrastructure, utilities and affordable transport options.

Key proposed actions:

Working bilaterally or through a mine completion taskforce (see recommendation 8), State Government and MMG to develop strategies for the future of mine-related infrastructure and services consistent with overall site closure objectives, legal requirements and agreements or undertakings by:

- Commissioning an independent study to assess potential arrangements and the economic viability of retaining key infrastructure such as the Lawn Hill airstrip, the power line, Darimah Village and the houses and port facilities at Karumba, including consideration of options for alternative uses. This study will need to be based on a comprehensive understanding of timelines, conditions, parameters and constraints with respect to MMG Century's use of these items. In addition, regional stakeholders and, in particular, traditional owners, should be consulted as part of this process.
- Identify potential adverse impacts of the cessation of mining on community infrastructure and services (e.g. on availability of flights, provision of emergency services, road maintenance) and agree on strategies to mitigate these impacts. This strategy needs to address the vexed issue of ongoing support arrangements for Bidunggu.

State Government to:

- Give higher priority to upgrading roads and other key infrastructure in the region (such as by constructing an all-weather road to Doomadgee). This would also have the benefit of creating additional employment and contracting opportunities in the region.

Enhancing Century's contribution through strategic community investments

Note that this group of recommendations proposes discrete actions but, as outlined in the Report, the ideal is *integrated* projects that simultaneously contribute to the economy, cultural maintenance, environment, social fabric, infrastructure and human capital.

Recommendation 7: Partner to improve health, education and community development

Objective: Effective and sustainable community initiatives and events in areas highly valued by a broad cross-section of regional residents and representing the company's commitment to the Lower Gulf Communities.

Key proposed actions:

- **Identify and commit to long-term partnerships to support one or two community development initiatives that have proven relevant and successful and can be sustained. These partnerships could potentially be with a health service or program, school, training providers, community based organisation or non-government organisation. To the extent practical, alignment should be sought with Local Implementation Programs (LIPs) under the Council of Australian Governments (COAG) partnership¹.**
- **Explore with GADC, Eligible Bodies, Gulf Area Community Social Development Trust (GACSDT), State Government and other relevant organisations options to invest in a trust fund or community chest which could be used to support community programs and events into the future.**
- **Continue a program of strategic sponsorships and donations into the passive closure phase as a supplement to community development initiatives. In particular, consider the range of projects endorsed as worthwhile by community members during the CSR's Community Consultations and assess which of these warrant support (see CSR's 2013 reports https://www.csr.com.au/publications?pub_type=&pub_search_authors=&pub_search_keyword=Century&search=publications&task=search).**
- **Include regular opportunities for regional school students to be exposed to mining-related roles so as to broaden vocational awareness and options among the region's students and build links between future regional residents and the mine that may be valuable during the post-production phase when there is limited employment available but community engagement is still valuable.**

¹ In 2008 the Council of Australian Governments (COAG) agreed to a Remote Service Delivery Partnership whereby all levels of government would work with Indigenous communities to close the gap on Indigenous disadvantage and adopted six targets. Each community works with the levels of government to develop its own Local Implementation Plan outlining actions for achieving these targets in health, schooling etc.

Enhancing Century's contribution to regional governance

Recommendation 8: Strengthen regional leadership and governance especially the GCA governance mechanisms

Objective: More robust local institutional arrangements and governance processes.

Key proposed actions:

Parties to the GCA to:

- Complete the review of governance bodies associated with the GCA (as recommended in the 15-year review of the GCA).

MMG to:

- Take all reasonable steps to ensure that each of the committees operating pursuant to the GCA have clearly defined terms of reference and lines of accountability, meet regularly, and are adequately resourced to undertake the functions assigned to them for the remaining period of their operation.
- Pursue opportunities to develop the capacity of Century employees from Gulf communities who have shown leadership potential (e.g. by providing them with access to mentors and coaches).
- Give further consideration to supporting the formation of a Young Leaders Forum in the Lower Gulf (recommended by the 10-year GCA review, but never fully actioned).

State Government to:

- Ensure that, while the CLAC continues to operate, there is senior, whole-of-government, representation on the Committee.
- Identify a "Ministerial Champion" to drive a cross-government approach to addressing the regional impacts of mine completion.

State Government and MMG to:

- Work together to establish a Century Mine Completion Taskforce to: (i) address and manage the likely regional impacts of mine closure, (ii) harness the resources needed, including by accessing funding from Royalties for Regions, (iii) act as a coordinating mechanism; and (iv) provide a forum for ongoing engagement with regional stakeholders. The Taskforce could potentially be auspiced by a suitably inclusive regional body such as Gulf Savannah Development or Regional Development Australia – Townsville and North-West Queensland.

Introduction

Background

MMG have commenced detailed planning for the cessation of mineral production at Century and eventual closure of the mine. It is anticipated that open pit production and shipping of zinc will cease in 2015 unless one of the multiple options for extending the productive life of the lease that MMG have been actively investigating is realised.

In the absence of a growth project reaching fruition in the short term, the end of zinc production will be followed by a period of 'active closure' lasting three to five years. During this time, the major infrastructure associated with the mine will be dealt with in accordance with operational requirements, business case appraisals and consultations. This infrastructure includes the Lawn Hill airstrip, Darimah Camp, the high voltage power line from Mount Isa to the Mine and the port facilities at Karumba. Much of this infrastructure will be retained to support the active closure phase and in anticipation of viable growth projects proving feasible. Other options could include dismantling some of this infrastructure, adapting it for other uses, and/or transferring it to the ownership of another party though transfer of assets is unlikely in the short to medium term. Large-scale rehabilitation earth works will also be undertaken, involving activities such as shaping and stabilisation of waste rock dumps, and possibly work related to the tailings dam.

The active closure period will be followed by a period of passive closure activities (environmental monitoring, 'caring for country'). During this period there will be only limited, possibly part-time, employment opportunities, but access to much of the lease may still be restricted. It is anticipated that this will last for some twenty to thirty years, before lease relinquishment. This is the point at which the State Government accepts that the company has discharged all of its licence obligations in relation to the rehabilitation and stabilisation of the site.

Closure planning needs to address a broad range of issues relating not only to the operational and environmental aspects of closure, but also: managing and, where practical, mitigating the social and economic impacts of closure; the future use of infrastructure; and, communication with potentially impacted stakeholders (Native Title Groups, employees, local communities, Shire Councils, businesses and neighbouring landholders). In particular, the Century operation is subject of the historic Gulf Communities Agreement (GCA) which was signed between the Company, the State Government and the Native Title Holders in 1997.

To support the 15-year Review of the GCA and closure planning, in 2012 MMG Century commissioned a wide-ranging study on the social aspects of closure by the Centre for Social Responsibility in Mining (CSR) at the University of Queensland.

Early in 2013, CSR produced four reports, comprising:

- an overview of Century's legacy and the potential social implications of closure
- a summary of feedback from community consultations conducted in mid-2012
- results of a survey of Aboriginal employees working at the Mine
- an assessment of impacts and future prospects for Gulf businesses and the regional economy.

These reports were designed to assist the Gulf communities and the company to prepare for closure, to ensure a positive and lasting legacy to the social, economic and institutional development of the communities in which the Mine has operated for over 15 years, and to help parties advance the aspirations of the GCA during the final years of production. The reports:

- provided an assessment of the impact of Century to date on the development of the Lower Gulf Region
- documented the likely impacts of completion of mining throughout the region

- identified strategies for mitigating these impacts and contributing to sustainable development outcomes for the Lower Gulf Region
- focused particularly on potential for realising the aspirations of the GCA in terms of economic improvements, protecting the land and environment, keeping Aboriginal culture and traditions strong, and contributing to social improvements and stronger communities.

In 2013, MMG on behalf of the Century Liaison Advisory Committee (CLAC) commissioned the 15-year Review of the GCA (see separate document) and also a specific Closure Social Impact Assessment (SIA) as Stage 2. This was intended as a forward looking exercise to identify the potential impacts of production ceasing at Century and the eventual mine closure and to propose strategies for managing and mitigating these impacts. The objectives and scope of the Stage 2 SIA are provided in **Appendix 1**.

Methodology

This report has been prepared utilising:

1. data and reports from CSR's 2012 study (reports published 2013) and from previous SIAs and reports conducted by CSR or provided by MMG
2. supplementary data provided by mine management on infrastructure, service provision and formal and informal commitments that have been made by mine personnel
3. available statistical analysis on social and economic conditions in Gulf Communities, currently and pre-Century
4. current MMG plans and strategies including stakeholder engagement plans, strategic community investment plans, and closure plans as well available regional plans.

The report uses the Five Capitals framework as an organising tool for describing the strengths and vulnerabilities of the Lower Gulf Region and its communities, and for mapping the changes which have occurred in the region since mining started at Century. The framework is also helpful for identifying opportunities for improvement and priority areas for intervention.

The key idea underpinning the Five Capitals framework is that communities and regions need a range of assets (or 'resources') if they are to survive and flourish over time. Economic growth which comes at the price of depleting the natural resource base of the area (e.g. water, soil quality, biodiversity) is not sustainable. On the other hand, focusing on protecting the environment without addressing the other needs of people living in the area (e.g. for health, education, services, employment, access to the wider economy) also does not make for viable communities. The aim has to be to balance these different requirements, so that the protection or expansion of one type of asset does not come at the expense of other assets.

As its name suggests, the framework identifies five classes of assets as critical to sustainable growth (see Figure 1). These are all inter-linked; if the stocks of one form of asset are low, it is very difficult to grow and protect other assets. For each asset type, the framework prompts a series of questions (see Table 1) which can be used to construct an overall picture of a region and its communities. In the context of the Lower Gulf, there is a cross-cutting cultural dimension which should also be considered since, for example, land and the natural environment have strong cultural value and significance; physical assets can include items of material culture which have cultural associations; and there are culturally determined networks, relationships and expected behaviours that constitute the social capital of Aboriginal peoples.

Table 1: Five Capitals and related questions

Asset Domain	Key questions
Economic	What are the sources of income in the region? How reliable are these? Who has access? To what extent, and in what ways, have people been able to accumulate wealth, in the form of savings, investments or physical assets (e.g. houses) How easy is it to access capital (credit, bank loans, etc.)?
Physical	What public use infrastructure is there in the region (e.g. roads, airstrips)? For whom? What is the communications infrastructure like (e.g. internet and mobile phone access)? What is the quality and quantity of housing in the region? How reliable and affordable is energy supply? How well connected is the region to markets and export facilities?
Natural	What is the quality and availability of water in the region? What is the soil quality like; can any of it be used for agriculture? What are the biodiversity and landscape values?
Human	How healthy are people? What is the quality and availability of health services? How well educated are people? What is the quality of the schools? What skills and work experience do people have? How mobile are they (i.e. how easily can they move from one job to another?) What is the quality of leadership in the communities?
Social	How well do people in the communities work together and support each other? How well are people linked to others outside of the region? How strong and effective are local institutions, such as councils and native title representative bodies? How effective have communities and groups been in maintaining their cultural identity?

The asset groups broadly align with the themes evident in the Native Title Groups' goals and aspirations, as recorded in the Gulf Communities Agreement (GCA). This Agreement was signed by the company, four NTGs and Queensland Government in 1997 to allow the Century Project to proceed (see Figure 2).

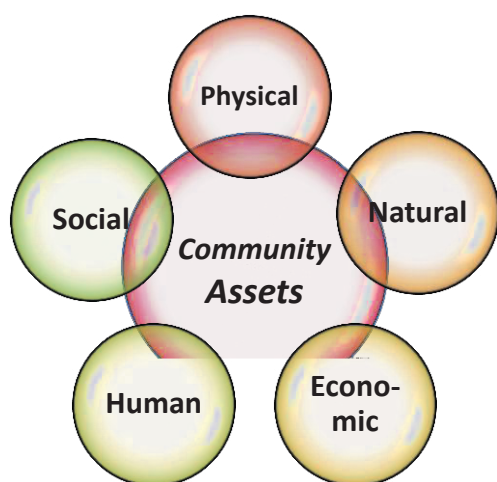


Figure 1: Five Capitals framework

Asset Domain	Definition
Economic	Income, financial resources and capacity to generate financial returns to society
Physical	Buildings and infrastructure such as transport, communications, housing, machinery, equipment and community facilities
Natural	Access to key natural resources such as water, land.
Human	Skills, Education, training, health, leadership.
Social	Institutions, networks and relationships, cultural maintenance

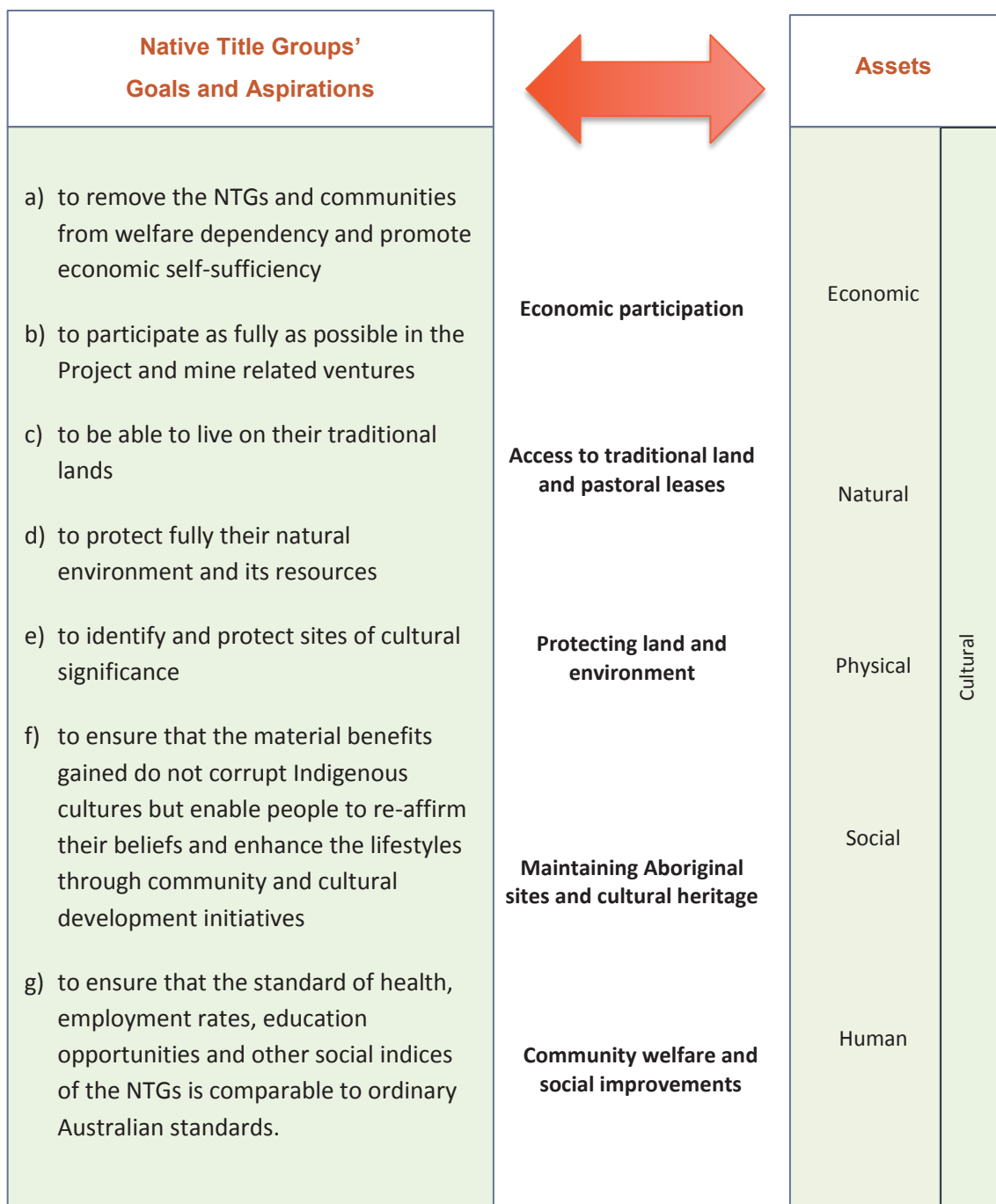


Figure 2: Native Title Groups' Goals and Aspirations Matched to Five Capitals



Images: Bird, Flower, Spider - Alex McGregor (Century)

Profile of the Lower Gulf Region pre-Century Mine

Despite an abundance of natural and cultural assets, the economy of the Lower Gulf Region was very limited in the 1990s. The region had a relatively small population in communities spread across a large area and cut off for months during the wet season and economic development was constrained by remoteness, service inadequacies, and limited infrastructure. Prior to Century mine, the Indigenous population was almost totally dependent on welfare or CDEP with limited ownership of either natural capital or other economic assets. The *Native Title Act 1993 (Cwlth)* had relatively recently afforded native title holders a right to negotiate with respect to mining and there was significant tension between those Aboriginal people favouring mining as the basis for economic opportunity and those whose priority was the strengthening of culture and securing recognition and rights to land which had long been problematic in Queensland. There was limited institutional development in the region.

The broad socio economic profile of the region at the time is outlined in Table 2. There are more details in previous Social Impact Assessments (see **Appendix 2**) and selected statistics are provided in **Appendix 3**.

Table 2: State of the community asset base in 1997 (cf. CSRM 2008).

Asset Group	Condition of the asset
Economic	<ul style="list-style-type: none"> • The Indigenous population in the region received relatively low incomes compared to the non-Indigenous population. 39% of Aboriginal people were in the low-wage bracket (<\$8,000 per year) compared to 23% of the non-Indigenous population. • Very little income for Aboriginal people was derived from sources other than social security payments and CDEP employment, with no income derived from mining • Besides seasonal paid employment, elements of a traditional subsistence economy still existed among the Aboriginal population, though to what extent is unknown • There was very limited use of Aboriginal pastoral leases for productive income-earning activity. Delta Downs, north east of Normanton, was the sole example of an Indigenous pastoral operation • Some commercial fishing and tourism related to recreational fishing, but few other private commercial enterprises beyond large cattle stations
Physical/ infrastructure	<ul style="list-style-type: none"> • Infrastructure including sanitation and water supply, power, telecommunications, and emergency services equipment were inadequate or non-existent and there was an acute shortage of housing. • No private land ownership in Aboriginal communities, overcrowding and housing in poor condition • The majority of roads in the region were not sealed and were subject to extensive wet season closure • Most commercial vehicles, plant and equipment were in Council ownership or with a small number of non-Indigenous contractors • Most commercial facilities (e.g. community stores) in State Government or Council ownership
Natural/ Environment	<ul style="list-style-type: none"> • The majority of land in the northwest region was owned either by the 100 or so non-Aboriginal pastoralists (with around 750,000 head of cattle), or by the government or mining companies • Aboriginal people had title to Doomadgee reserve, the Aboriginal Land Trust at Gregory and Aboriginal pastoral leases on Troutbeck, Brokera, Tarrant and Bundella. • The natural environment supported the pastoral and tourism industries in the region, with commercial fishing in the river estuaries. There were several culturally important sites and landscapes for Aboriginal people in the region (e.g. Boodjamulla or Lawn Hill Gorge was subject to a claim under the Queensland Aboriginal Land Act)
Human	<ul style="list-style-type: none"> • Health was below State and National levels with higher mortality ratios in areas with relatively large Indigenous populations • Critical shortage of trained medical staff • Very few Aboriginal people over the age of 15 in the Indigenous areas of Normanton, Doomadgee and Mornington had formal educational qualifications

Social/ Institutional	<ul style="list-style-type: none"> • Legacy of disrupted social structures due to mission era control and administration • Cyclic relation between crowding, household stress, family problems and alcohol and drug abuse • Many overlapping claims under the Native Title Act, highlighting fragmented social networks contributing to a low sense of security and well-being • Little Indigenous engagement with mainstream regional development forums (eg Gulf Savannah Development, Gulf Regional Development Plan) • The significant Indigenous population had been historically and institutionally marginalised.
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Century as a Platform for Change and Cumulative Contribution to the Region

Since its establishment, Century Mine has been the largest single generator of economic activity in the Lower Gulf Region. These contributions have included provision of stable well paid employment opportunities and increased personal income flows for employees and those close to them; business for supply chain companies; establishment of new businesses in the region; and payment of royalties, rates and charges that can be channelled to regional infrastructure development and economic advancement. In addition, the presence of the mine has created or contributed to additional infrastructure, such as the sealed road to Gregory, improved telecommunications, new port facilities in Karumba and a sealed airstrip at Lawn Hill. The main negative impacts of the operation have been land disturbance, damage to some cultural heritage and the environmental footprint of the mine, pipeline and loading facilities.

Community expectations for positive change were high from the outset of mine development and, among Aboriginal peoples, particularly following the signing of the GCA. However, meeting these expectations proved to be problematic.

While employment at the mine and access to Century flights are acknowledged as delivering significant benefits for the specific recipients, socio-economic conditions in the Lower Gulf have improved only marginally for many of the residents. According to OESR (2012) *Queensland Regional Profiles*, welfare dependence continues to be a challenge with unemployment rates in the region around three times that for Queensland as a whole and a persistent gap in income levels between Aboriginal and non-Aboriginal residents.

Relative to state and national percentages, the four shires have a high percentage of Indigenous Australians (28-92%) and high unemployment rates (11.5%-14.6% compared to Qld 6.1%). The Aboriginal shires of Doomadgee and Mornington have a younger median age (22 and 26 years) than the Queensland figure of 36 years (OESR, 2011). Those shires also have higher average household sizes (5.1 and 4 persons respectively) compared to the state average of 2.6.

All but Burke Shire are categorised in the bottom 10% in the Australian Bureau of Statistics (ABS) Socio-Economic Index (2011) which ranks access to material and social resources, and ability to participate in society for residents of various regions. This national list ranks 564 local government areas from #1 position as the most disadvantaged socio-economic position to #564 as the most advantaged (See **Appendix 4**). The remoteness of the region exacerbates the situation with, for instance, high transport and freight costs inflating the cost of living especially for Mornington Island.

Based on 2011 ABS Census data, income levels for Aboriginal residents of the region are low in comparison to non-Indigenous Queenslanders. For instance 65% of the population of Doomadgee

and Mornington Island aged 15 years or over have a personal weekly income of less than \$400, compared with a statewide median of \$587 (Figure 3).

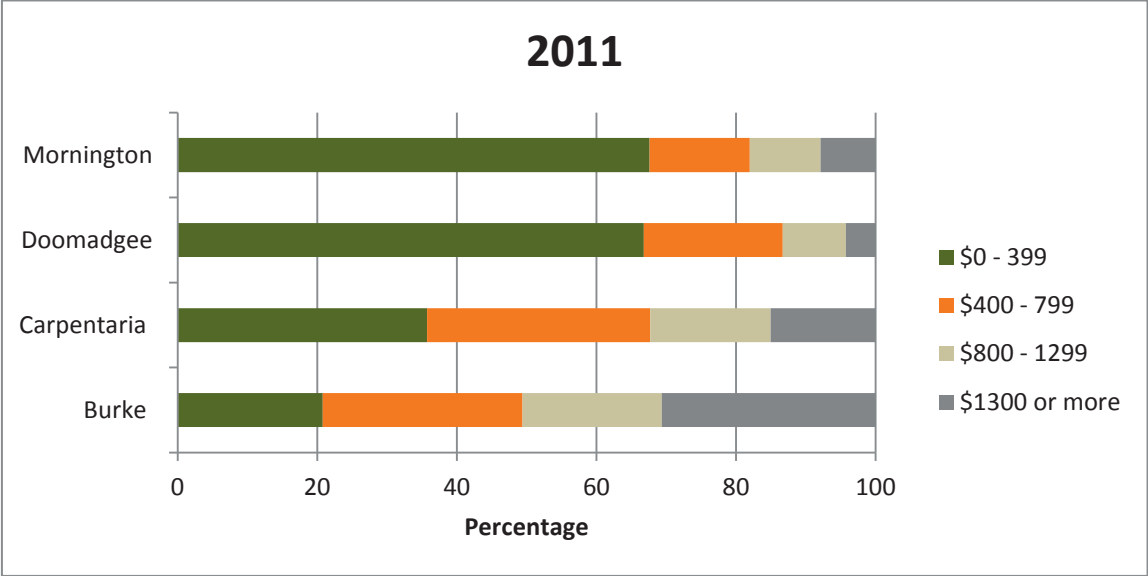


Figure 3: Percentage of people in four shires in various weekly income brackets

The shortage of tangible examples of positive impacts at the local level has provoked a bleak assessment by some community members of the overall contribution the mine has made in the region. However, it is clear that the past 15 years have seen additional jobs, services, revenue, activities and infrastructure that did not exist before Century (see Tables 3 - 7). Many of these changes have been a direct or indirect result of the Century project, although various government programs and the activities of other regional bodies have also contributed to change.

Regional economy

In economic terms, the mine has been responsible for a large financial injection into the region over the past 16 years. Although effects at an individual, community and even regional level can seem modest in some respects, Century currently pays wages to 150 residents of the Lower Gulf Region. Over the life of the mine, the number of local people employed has exceeded 900. There has also been a growth in the number of businesses in the region in recent years, including several enterprises now operated by Aboriginal organisations, such as service stations, plant hire, construction and maintenance, and school tuckshops. At the same time, however, there has been little expansion of business activity in the main Aboriginal communities of Doomadgee and Mornington Island; these communities have also had limited access to employment opportunities at the mine despite regular commute flights direct from the community to the mine.

The main contributions of Century to the regional economy in terms of wages, commercial contracts for suppliers, payments to State and Local Government and to Native Title Groups and GCA-related bodies are detailed in Table 3.

Table 3: Summary of main impacts of Century Mine on the economy of the Lower Gulf Region.

Asset Group	Description of contribution
Economic	<ul style="list-style-type: none"> • Wages paid by both Century and its contractors to Gulf-based employees have been a significant addition to economic assets (though not all of it remains in the Lower Gulf economy). <ul style="list-style-type: none"> • In 2012, the annual value of wages paid to Century’s GCA employees² (living within and outside of the Gulf) totalled \$17.6 million. • Nine contractors and suppliers provided CSRMs with data on employee wages in 2012. They paid a combined total of \$11.2m in that year to Indigenous and non-Indigenous employees wherever they resided. • Wages for Century employees residing in Burke, Carpentaria, Doomadgee and Mornington Shires (both Indigenous and non-Indigenous) amounted to \$8.8 m in 2012. • Century has facilitated the development of some Indigenous enterprises. The major success stories in terms of direct contracts to provide mining related services are Northern Projects Contracting (NPC) and Hookey Contracting. • Direct payments made to Gulf-based contractors and suppliers. In 2011 this was \$21.3m with almost \$17m of it going to two Indigenous-owned contracting businesses. Total spend to contractors and suppliers in the four Shires of over \$62.8m from 2008-2012. • Payments to Shires. In 2012 Century paid \$2.5m in rates and other charges to Burke Shire (where the mine is situated) and almost \$1m to Carpentaria Shire (location of the de-watering and port facility). • Payments to State Government. The annual royalties paid to the Queensland Government by the Century operation for the five years 2008-2012 totalled approximately \$100 million which proportionally benefits the whole State through spending on education, health, police, roads and other needs. • Royalty and compensation payments to Native Title Groups. These payments are channelled through the Gulf Aboriginal Development Corporation (GADC) to: (i) Traditional Waanyi Elders Aboriginal Corporation (ii) Bidunggu Aboriginal Corporation (iii) North Galanja Aboriginal Corporation (iv) Ngumarryina Aboriginal Corporation and (v) Waanyi Nation Aboriginal Corporation (since 2002) (for the Waanyi Native Title Group) (vi) Gkuthaarn Aboriginal Corporation (for the Gkuthaarn Kukatj Native Title Groups) and (vii) an Eligible Body established to represent the Mingginda Native Title Group. Altogether the payments, given indexation, will exceed \$12m over 20 years (e.g. \$918,000 in 2011). • Funding is provided annually to the Aboriginal Development Benefits Trust (ADBT) in accordance with the GCA – approximately \$1.2m in the 2012 financial year. This provides financial assistance to new Indigenous businesses in the region. Over the life of the mine this will total in excess of \$15m. • The transfer of pastoral leases whose core business is cattle production has facilitated Indigenous enterprise. In particular the majority Waanyi-owned LHRPHC now runs about 25,000 head of cattle and has gross assets approaching \$70 million. The business is investing in growth but should soon produce surplus funds to invest in other business activities and social programs.

² The Gulf Communities Agreement made provisions for employment of local Aboriginal people. The term ‘GCA employee’ refers to all those employees identified as having local Indigenous status or long-term affiliation with the Gulf communities. It encompasses members of GCA Native Title Groups (regardless of whether they live locally or not), other Indigenous people who have lived in the Gulf communities for five years or more, and a small number of non-Indigenous people who have lived in the Gulf communities for five years or more.

Employment

The mining industry is a significant employer in parts of the region such as Burke and Carpentaria, which include the towns of Burketown and Normanton respectively (Figure 4). However, mining employment from the Aboriginal communities of Doomadgee and Mornington Island remains low. This is partly a consequence of the choice, by some who gain employment at the mine, to move out of the region. Thirty eight percent of GCA employees who participated in CSR’s 2012 survey had moved residence since starting work at Century. These relocations have been both in and out of the Gulf communities, but the net effect is for a significant number of Century workers to relocate to larger centres particularly Cairns and Townsville.

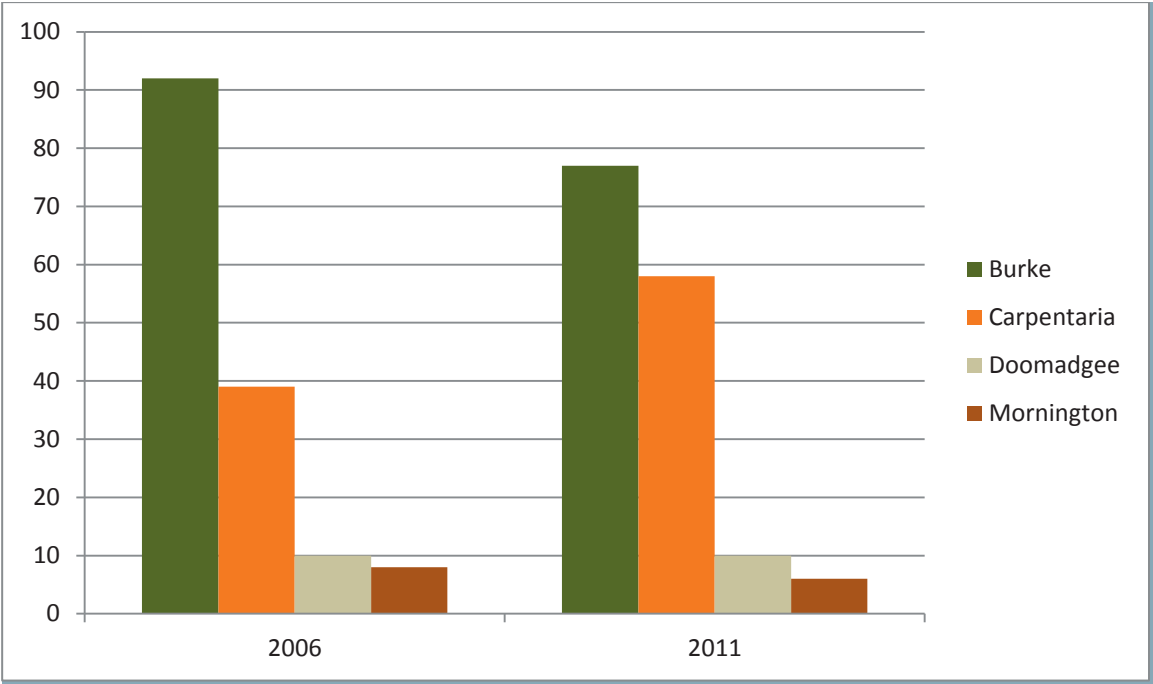


Figure 4: Number of people employed in mining by local government area



Images: Rodger Barnes (CSR)

Images: Century pre-vocational trainees with researchers; Crushing contractor at work

Regional infrastructure and physical assets

The physical and built assets of the region have been significantly enhanced over the past 16 years. The availability of suitable land, buildings, infrastructure and services is a crucial determinant of the socio-economic development of each of the towns in the Lower Gulf. Some of this development was directly linked to the Century Project including the construction of the all-weather airstrip at Lawn Hill to service the FIFO workforce, the dredging of the port at Karumba and the high voltage power line from Mount Isa. Such additions have sometimes had wider benefits. Access to flights, for example, has facilitated the movement of employees out of communities in the Gulf and into Mount Isa, Cairns and Townsville and has greatly improved emergency services in the region and the upgraded port conditions serve the live cattle export trade.

Other factors have contributed to improved regional infrastructure. For instance there has been increased State Government investment in the road network in recent years and increases in new dwelling approvals in Carpentaria Shire since 2008, as well as Federal Government investment in home construction and community infrastructure under the Local Implementation Plans in Doomadgee and on Mornington Island.

As a result of all these initiatives there is now a better regional road and air transport network for freight, trade, passenger, emergency and community travel. Key features of the region's physical infrastructure are summarised in Table 4. At the same time, infrastructure challenges remain, with many roads in the region unsealed and grid power not available in all communities.

As well, housing pressure remains acute. In 2011, 65% of Indigenous households in Doomadgee and 41% of those on Mornington Island experienced overcrowding. The Doomadgee figure is nearly six times the rate for Indigenous Queensland and Indigenous Australia³.

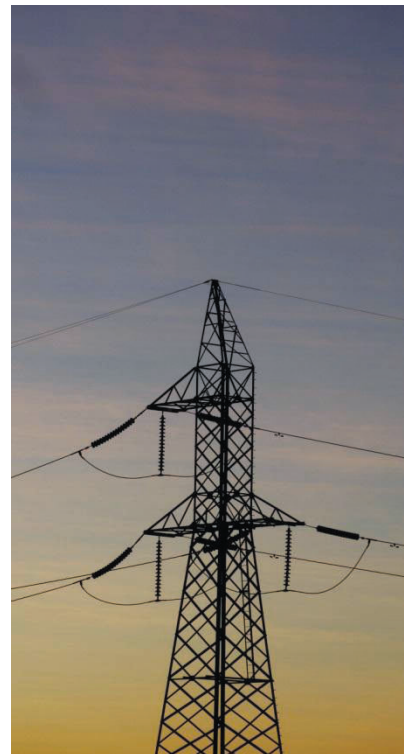
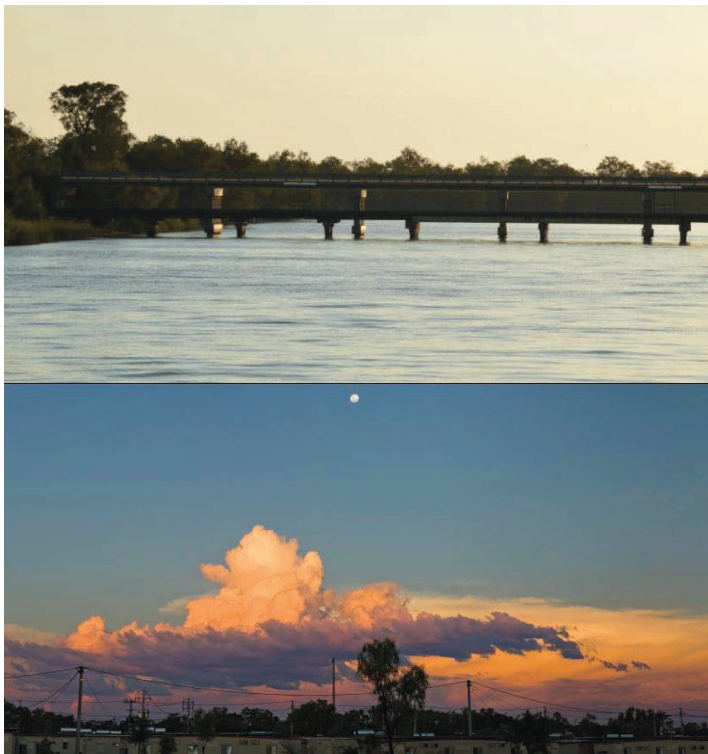
Further, many people living in the region lack easy access to the internet and do not have their own means of transport. In Queensland as a whole there are only 22% of homes without internet connection and 7% with no motor vehicle. By contrast, of the occupied private dwellings in Carpentaria and Burke Shires, only 410 (or 54%) had an internet connection and 98 (13%) had no motor vehicles. In Doomadgee, 63% of dwellings had no internet connection and 51% had no motor vehicles. On Mornington Island, 71% of dwellings had no internet connection and 49% had no motor vehicles.

The quality and availability of housing continues to be a significant issue in the region. Increased income flows into the communities have had no apparent impact on the housing stock with only four new dwellings built in 2011-2012. However there are significant house-building programs underway in Doomadgee and Mornington as part of the Council of Australian Governments' (COAG) National Partnership Agreement on Remote Indigenous Housing. There are limited opportunities for investment in property in the Gulf itself as housing is mainly government-owned; private ownership would be extremely difficult to achieve in Doomadgee and on Mornington Island, and the small private market in Normanton, Burketown and Karumba is inflated. (Century itself is a participant in the Karumba housing market.) Normanton has the highest rates of homes owned or being purchased in the region, although, at 38% of residences, that is still well below the State figure of 63%.

³ Medicare Local, Central and North West Queensland (2013) *Population Health Profiles, Doomadgee and Mornington Island*

Table 4: Summary of main impacts of Century Mine on the infrastructure of the Lower Gulf Region.

Asset Group	Description of contribution
Physical/ Infrastructure	<ul style="list-style-type: none"> • Community services and infrastructure have improved in recent years in Burke and Carpentaria Shires. The rates and charges paid by Century provide significant revenue for these purposes. • The houses provided by the Queensland Government in Bidunggu (also known as Gregory outstation) have not been maintained and the community lacks power, waste disposal etc. • There have been various road upgrades in the region that have increased geographical mobility, especially for those who have found work at the mine. • Airstrips have been improved (e.g. Karumba airstrip sealed) and access to flights increased with jet services from Townsville and Cairns, and Century chartered flights to and from Mornington Island, Doomadgee, Burketown, Normanton, Karumba and Mount Isa four or five days a week . • The port at Karumba is dredged about every two years which has facilitated other industries notably the export of live cattle. • Century has provided, contributed to, or boosted some infrastructure and services that have facilitated the growth of other businesses or supported communities. For example, this includes increased road and air freight services and the barge to Mornington Island. • Other infrastructure is Century-specific and it is unclear that it has benefitted others or will remain once operations cease (e.g. the high voltage power line from Mount Isa to the mine and the pipeline to Karumba). • There are additional houses in most communities and a bigger range of accommodation facilities partly as a result of government investment in home construction and community infrastructure under the Local Implementation Plans • Century has played a central role in fire management and emergency services in the region



Images: Albert River Bridges, Burketown (Madison Marshall, Burketown); Others Alex McGregor (Century)

Images (Clockwise from top Left): Bridge; Power pylon; Darimah village at sunset

Natural capital and the environment

The Southern Gulf region has a sparse population and mainly low intensity land uses. Century Mine itself has a very significant environmental foot-print, although in a contained local area and under highly controlled regulatory conditions.

Table 5 summarises the state of the region’s natural or environmental assets. A distinctive characteristic of the natural environment of the region is the strong cultural affiliations the Aboriginal people of the Lower Gulf have to their respective lands and sea territories. The historical experience of Aboriginal people, especially the dispossession of their land with the advent of pastoralism in the region and subsequent relocation to missions and reserves across Queensland, massively disrupted traditional knowledge and continuity of many cultural practices.

Despite this history, Aboriginal people retain a strong sense of custodial responsibilities to ensure their land and sites of cultural importance are protected. A strong desire persists throughout the Aboriginal community to maintain and invigorate their cultural affiliations to land and sea and to positively promote Aboriginal culture.

Table 5: Summary of main impacts of Century Mine on the natural assets of the Lower Gulf Region.

Asset Group	Description of contribution
Natural	<ul style="list-style-type: none"> • There have been significant changes to land ownership and management. Native Title groups have achieved increased access to country – there is now a sizeable Indigenous-controlled estate from pastoral holdings, grants of land and Native Title determinations. For example, a 2009 determination recognised 1.7 million hectares including, most significantly, Lawn Hill and Riversleigh Pastoral Holding (LHRPHC). • Aboriginal people have been granted land at Bidunggu and Karumba. • Native Title over Lawn Hill National Park and the Wellesley Islands in the Gulf of Carpentaria is recognised and other Native Title claims are underway. • Native Title holders have restricted access to the land that forms the mining lease – a situation which will continue for decades. • LHRPHC has been an important land manager: e.g. Fencing of Gregory River and periodic weed management programs with Southern Gulf Catchments. • There are some 3,000 hectares of disturbed land to rehabilitate or stabilise, a proportion of which (waste rock dumps, tailings facilities and the pit) may be permanently affected.

Resolution of native title issues with the assistance of Century and the State Government has been fundamental to progress. The transfer to an Aboriginal corporation of majority ownership of the Lawn Hill and Riversleigh Pastoral Holding Company and also grants of land to Aboriginal people at Bidunggu and Karumba have expanded Aboriginal owned or controlled land. In addition, Native Title claims over the Lawn Hill National Park and the Wellesley Islands in the Gulf of Carpentaria have been determined.

As a result, there is now a substantial Indigenous estate of over 1.7million hectares in the Lower Gulf (Figure 5). Such an extensive land estate in control of Aboriginal people lays a solid foundation for a range of positive legacies particularly with respect to environmental land management, tourism and cultural maintenance and cultural heritage management.

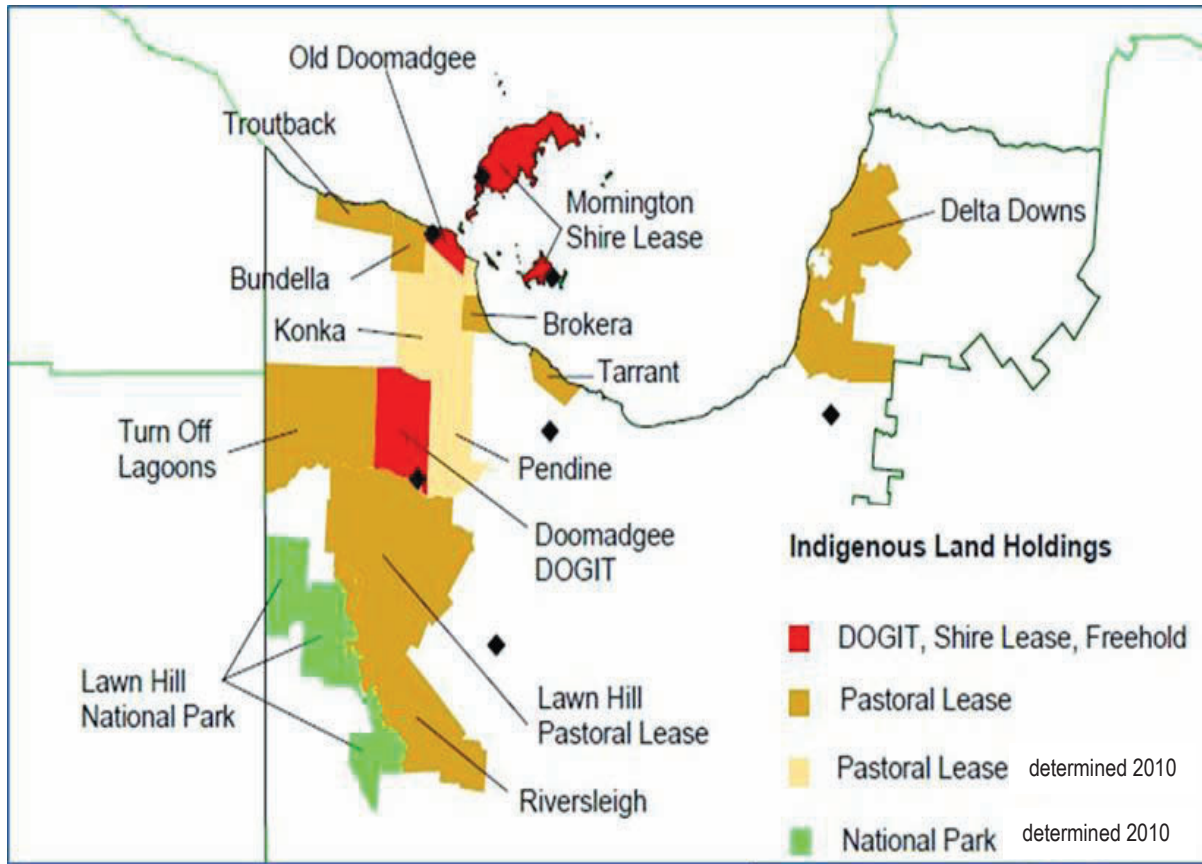
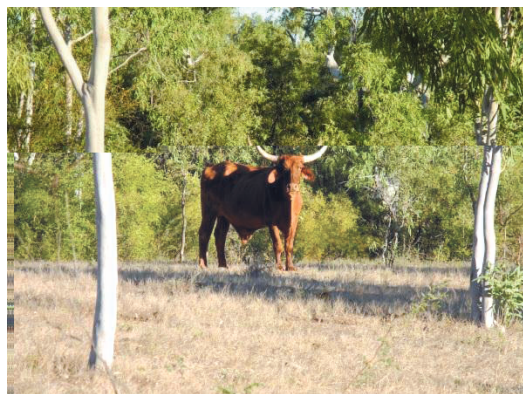
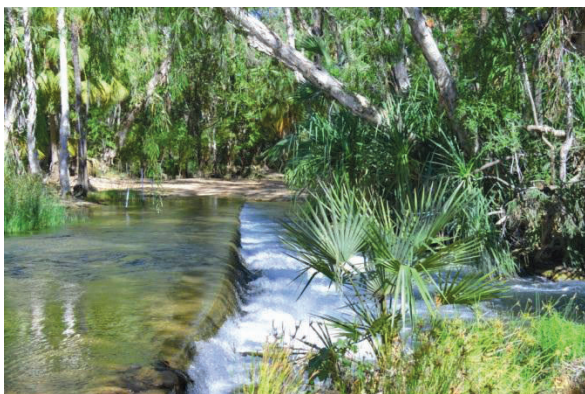


Figure 5: Map showing the extent of Indigenous controlled land in the Lower Gulf as at 2000 (from Moran & Burgen 2000).

Note: 2010 determinations – consent determination with respect to Pendine and Konka was made in favour of the Ganggalidda and Gawara peoples by the Federal Court in June. In December 2010 the court recognised the Waanyi peoples’ non-exclusive possession of a number of pastoral properties, reserves and Boodjamulla (Lawn Hill) National Park.



Images: L = Madison Marshall (Burketown); R = Rodger Barnes (SSRM)

Images: Left - Gregory River crossing, Adel’s Grove; Right - Riversleigh steer

Human capital

Century’s main contribution to the region’s human capital has been through increasing the work experience, skills, training and employability of more than 900 members of the Native Title Groups and local Aboriginal population of the Lower Gulf communities. This has had significant benefits for many of these employees.

Other impacts on the education and health of local residents are less direct since community well-being is generally understood to be the responsibility of government rather than industry. Overall, there has been limited progress in reducing the gap between Lower Gulf residents on many measures of human capital (Table 6). Mine closure may bring greater challenges in coming decades.

Table 6: Summary of main impacts of Century Mine on human capital in the Lower Gulf Region.

Asset Group	Description of contribution
Human	<p>Employment</p> <ul style="list-style-type: none"> • The mine is a major provider of jobs to local Indigenous people living in the region or outside • Many of the jobs taken by local people have only a limited skill component and do not require formal qualifications; one-third of GCA posts are truck-driving or operator roles. • More than 900 members of the Native Title Groups or Lower Gulf communities have been employed at Century since 1997. • For more than one-third of current employees in GCA positions the mine provided their first experience of participating in the mainstream workforce. People in GCA positions currently constitute 21% of the workforce and other Indigenous people a further 2.5%. <p>Education</p> <ul style="list-style-type: none"> • Century has sponsored some programs with the schools to encourage retention and achievement. For example it provides flights for the annual school exchange program run by Waanyi Nation Aboriginal Corporation (WNAC) for students from Doomadgee State School. <p>Training</p> <ul style="list-style-type: none"> • Century runs three 12-week pre-vocational courses a year. There were 30 graduates from the program in 2011. This makes the mine a significant training provider in the region. • The training provided by Century is reported to have increased self-esteem and confidence, increased work ethic and motivation and leadership capacity • Nearly all the Aboriginal people interviewed in the community consultations who were in community leadership positions had, at some stage, worked at Century or received training there. • In 2012 there were approx. 75 Indigenous apprentices and trainees and 30 Indigenous employees gained qualifications in heavy vehicle operation in 2011. • Only 5% of employees in GCA roles have qualified trades positions and very few have supervisor roles. <p>Health</p> <ul style="list-style-type: none"> • Health benefits from working at Century include health checks, health education, first aid training, alcohol and drug awareness, gym and sporting facilities at Darimah village to encourage exercise and recreational activities, and access to a range of nutritious food. • Around 60% of all respondents to the GCA employee survey participated in mine organised exercise. Use of the company gym was the most common activity (43%), followed by sports teams (35%) and physical fitness programs (15%). • Century flights have assisted community members to travel to larger centres to access healthcare, receive medical treatment that might otherwise have been delayed, visit sick relatives or return from treatment to visit communities.

Training, skills development and employability

Opportunities for employment in the Lower Gulf Region are limited and consist mainly of small, family run businesses and pastoral leases. The major source of income for Aboriginal people in the region remains welfare, with Century Mine being the only other significant source of employment. The total workforce at Century has fluctuated. In 2012 it was 1195, down from 1504 in 2007.

The survey conducted with 2012 GCA employees indicates that working at Century has been a positive experience for most of them as it allows people to stay in the region or in close contact with their home community. It also allows people to maintain family networks because of rosters and the extent of family group employment on site (82% have three or more relatives working at Century). As well, a number of workers have had previous periods of employment at Century suggesting the mine accepts career breaks and multiple career pathways.

Overall 93% of the survey respondents believe that their experience working at the mine will create long-term opportunities for them inside and outside the mining industry. Most (83%) of the GCA employees who responded to the 2012 survey have received some Pre-vocational training, Certificates, Apprenticeships, Traineeships and competency based training while at Century. However, for many this was first-aid training rather than broader initiatives to up-skill the workforce.

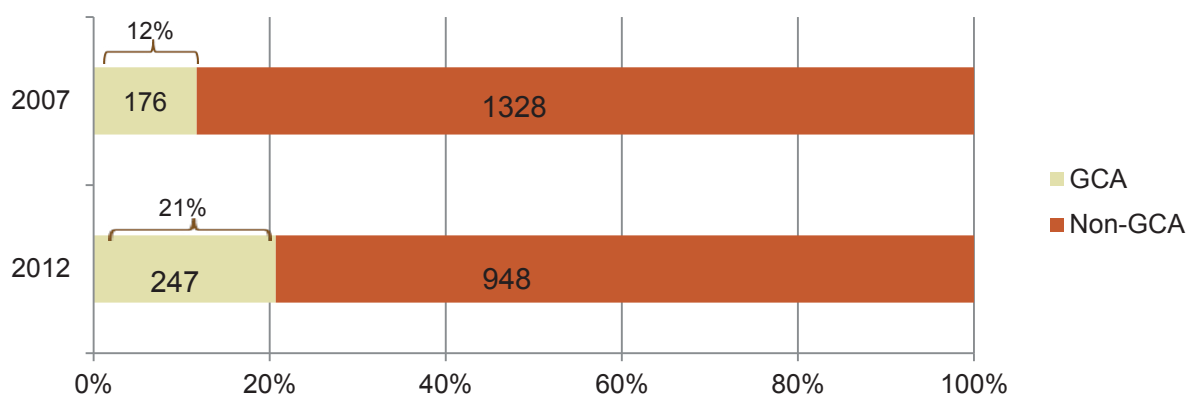


Figure 6: Employment at Century GCA/ non-GCA, 2007 and 2012.

Many social and community issues continue to impact on the general employability of community residents. These include low levels of literacy and numeracy, lack of confidence, family and cultural obligations, drug and alcohol dependencies, and the inability of minor offenders to obtain the 'blue cards' required for community services positions.

Education

There are now some 450 vocational education and training students in the region an equivalent proportion of the population to the statewide situation. Despite these encouraging signs, the region still suffers educational disadvantage.

The *Index of Community Socio-educational Advantage* (ICSEA) is a scale that represents levels of educational advantage. Each school is assigned a value based on an averaged level for all students in that school. ICSEA values range from around 500 (representing extremely educationally disadvantaged backgrounds) to about 1300 (representing schools with students with very

educationally advantaged backgrounds). Half of all schools have ICSEA values above 1000, but with the exception of Karumba, the ICSEA values for schools in the Gulf region are all well below 1000. Between 2009 and 2011, the ICSEA values for Normanton schools have increased whereas Doomadgee, Burketown, and Karumba schools have decreased, Doomadgee most dramatically.

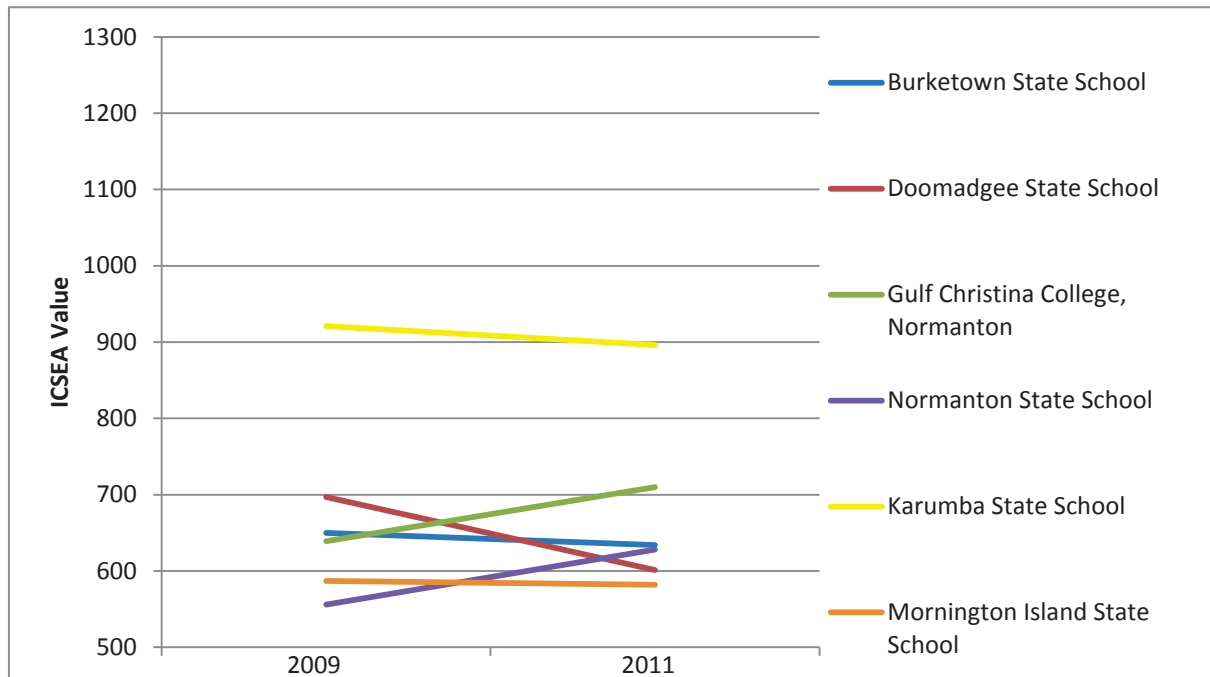


Figure 7: Index of Community Socio-educational Advantage (ICSEA) 2009, 2011.

Health

“Health services within the Lower Gulf of Carpentaria are currently delivered in the various communities through a combination of locally based services within each Aboriginal community and regional visiting specialist services.

The Central and North West Queensland Medicare Local (formally NWQPHC), Yippiipi Gulf Indigenous Health Council (YGIHC), Royal Flying Doctors Service (RFDS), Queensland Health, human service organisations and other State and Commonwealth funded programs perform different yet complementary roles within the health system of the Lower Gulf of Carpentaria. Partner organisations are committed to ensuring local health services are appropriate and meet the needs of local people.” (Medicare Local, 2013 <http://www.cnwqml.com.au/our-region>).

Although there are some promising signs such as a high proportion of children from the region being protected according to the childhood immunisation schedule, the impacts of alcohol, tobacco and other drugs, poor nutrition, and unhealthy lifestyles are evident. Health outcomes remain poor relative to non-Indigenous Queenslanders and in line with the pattern of Indigenous Queenslanders experiencing 2.3 times the state rate of disease and injury. The main conditions contributing to this difference are cardiovascular diseases (27.2%), diabetes (15.6%) and chronic respiratory disease (10.8%). In this region such chronic diseases are increasing. Other health issues affecting significant numbers are cancer, renal disease, and psychological distress while oral health, environmental

health (particularly overcrowding), alcohol and drug misuse, obesity and sexual health are also relevant public health priorities.

The region lacks preventative programs, relies heavily on visiting health and allied health professionals and suffers a shortage of personnel including social workers and counsellors. Some health services are not available and transport deficiencies also limit access to health care.

Social and institutional assets

In Gulf communities there is a cyclic relation between crowding, household stress, family social problems and alcohol and drug abuse. This is despite recent investment under Local Implementation Plans and the National Partnership Agreement on Remote Indigenous Housing in housing and alcohol and drug programs. There is no clear evidence that the social fabric has strengthened or institutional capacity increased as a result of the mine.

Table 7: Summary of main impacts of Century Mine on the social and institutional assets of the Lower Gulf Region.

Asset Group	Description of contribution
Social/ Institutional	<ul style="list-style-type: none"> Century has sponsored a number of community programs that contribute to social improvements and community well-being and has donated to charities, community organisations, sporting activities and community events of importance to communities. However, the company’s approach to sponsorships has tended to be ad hoc and opportunistic, rather than strategic. Funds controlled by Native Title Groups by virtue of the GCA have been used to re-vitalise aspects of Aboriginal culture and heritage e.g. the Waanyi language program. The Mirndiyan Gununa Cultural Centre and performances by the Mornington Island Dancers are important expressions of Aboriginal cultural identity and traditions and both have received assistance from Century in the form of grants or flights. There are some strong Aboriginal organisations in the region but some of those established as a consequence of the Gulf Communities Agreement seem to have functioned intermittently and without a unified community constituency or robust and transparent processes. A number of effective Aboriginal organisations (Yippippi, Bynoe, Mougibi Housing Co-operative Society, Junkuri Laka Justice Association) have sometimes struggled to get funding and be included as an integral part of regional development plans Century has assisted regional organisations in their operations for example undertaking some logistics for the Carpentaria Land Council Aboriginal Corporation (CLCAC)’s Gulf Water Forum on Sweers Island in 2011 which was part of a project coordinated by North Australian Indigenous Land and Sea Management Alliance (NAISMA),

There has been a trend towards government outsourcing of services such as child development, employment services, and community safety to mainly non-government organisations. A range of NGOs and development organisations now operate in the region – particularly in the Aboriginal communities. A consequence of this trend is fewer Aboriginal run and controlled organisations delivering such services in communities. Opportunities for capacity building, developing good governance and income from wages have been further diminished as a result.

Looking Ahead – Awareness of Completion of Production and Closure

The impacts of closure will not be uniformly felt across all communities or all population groups nor will all occur at a single time. Closing a mine is an extended process that passes through a number of phases. Full consultation and understanding of the changes involved are therefore important.

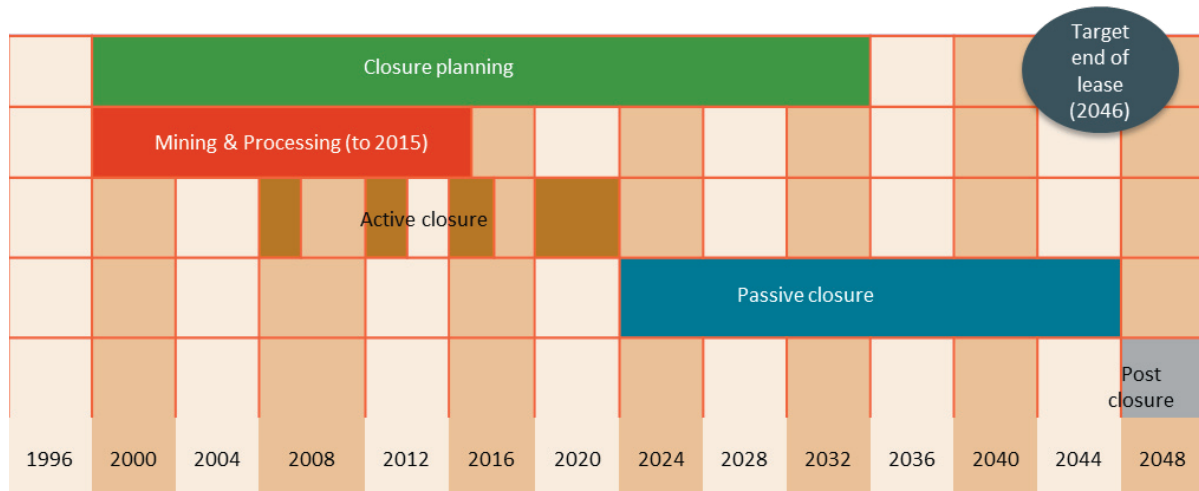


Figure 8: Timeline of the Century Mine life-cycle

Knowledge of and preparedness for mine completion - workforce

In 2012 CSRSM surveyed Century’s local Aboriginal employees to ascertain the level of knowledge and preparedness of Century’s workforce for closure. We found that many participants had an incomplete understanding of completion of mining and closure timelines and processes. For instance, they understood there would be a need for some employees after production ceased, but were not clear how many, what skills sets would be involved, the likely duration of the roles, nor the arrangements for selecting and training people for those roles. Even the projected date for finishing production was only vaguely known with 2014–2016 being mentioned most often. There was a desire for more regular, face to face communication about transition plans and the years ahead.

Most respondents believed that closure will have a negative impact on them and their families. The impact most often mentioned was loss of employment and associated financial loss at the personal and family level. Many respondents stated that loss of jobs and income would make it difficult to pay for their children’s education, bills, food expenses, and vehicle and housing loans.

Other concerns of employees about the end of zinc production and eventual closure of the mine are:

- not having enough or suitable training to allow them to pursue future careers
- increased unemployment in the community, and related social issues
- a drop in population numbers in Karumba with negative impacts on businesses and services
- the loss of businesses and sponsorships supported by MMG
- lack of job security and insufficient information about future alternative opportunities e.g. phosphate production, transfer to Dugald River (possibly an underground operation)
- lack of understanding of redundancy payments and other entitlements they may have.

The majority of respondents wanted to continue working at Century for as long as possible. Furthermore, following closure, employees generally wished to continue working in the mining

industry. Most respondents intended to either stay in, or return to, the Gulf after completing employment at Century, but approximately one third (33%) were unsure about their plans for work and place of residence in future.

Many participants mentioned that more up-skilling and training is necessary for people to successfully obtain employment within the mining industry, the Gulf communities or elsewhere.

Community expectations, priorities and concerns

Expectations with respect to closure are shaped by scepticism about the distribution and durability of the benefits derived from the Century Mine Project and also by the fact that many community members, including elders, have not been on the site for a decade or more. Community members, however, remain highly motivated to engage with Century over the remaining years of operation with an express view to deliver sustainable positive legacies for the region.

There is keen interest over the fate of key infrastructure at the mine, particularly Darimah Village with expectations in some quarters that it may remain as a resource for the region, potentially as a tourism or training facility (pre-employment training being specifically mentioned by some).

Many people who we spoke to also expressed the hope that MMG-Century will work increasingly with other organisations and authorities in the region to ensure that the economic, social, physical, natural and human assets of the region are maintained and enhanced in future.

The immediate priorities from the community perspective revolve around addressing questions over the future of those employed at Century and, in particular, the possible effects on community infrastructure and services if employees choose to return to live in their communities of origin. The potential gap left by the reduction or cessation of Century flights was another prominent and common concern across the communities.

All stakeholders called for more information about what is going on at Century generally as well as closure plans in particular. This included information on criteria, scope and plans for rehabilitation, timing of key changes, and opportunities for involvement of Native Title Groups, employees and local businesses.

Community members and community organisations want to be actively engaged in reviewing priorities and in action planning. There are high expectations that closure planning will be characterised by closer involvement (as was the case during the construction phase) and certainly that people will be informed and consulted about closure options and closure timelines. Community members want to see a substantial role for locals and Native Title Groups in the rehabilitation works. However there are quite varying expectations about the kind and amount of work that will be involved (and hence the number of jobs) and also about how long the work will last for, with figures between 5 and 15 years fairly commonly mentioned. It seems that people anticipate both more and more substantial, employment opportunities post-production than are likely to be available.

Formal and informal commitments

Aside from external legally binding requirements under the Environmental Authority (Lawn Hill) applicable to the mining lease, most formal commitments are those incurred under the GCA. A prominent expectation is for full compliance with commitments under the GCA by completion – though there are varying interpretations of what that might mean.

There is also an expectation of continuing commitment to the GCA after zinc production ceases, including continued support for the Native Title Groups who are parties to the Agreement. Indeed, the expectation is that, regardless of the times when payments to various bodies cease, Century will remain committed to developing and supporting various GCA-related bodies (especially those in which it plays a role) to become effective and viable independent organisations for as long as their function is valued in the community.

For instance this supported transition to independence is understood to be the future with respect to LHRPHC. As well, there is an insistence that Schedule 2, Clause 77 of the GCA explicitly commits the company to encourage Local Aboriginal People and Local Aboriginal Corporations to submit tenders for rehabilitation work and assist them in building capacity to compete successfully for such work.

Some other commitments under the GCA and to other stakeholders were short-term and were fulfilled promptly. Many undertakings have faced (often unexplained) delays or variations, including commitments to help fund repairs to Shire roads. Some voluntary undertakings such as Century's contribution to the recreation centre in Doomadgee and particularly its philanthropic activities in Karumba were appreciated. However beyond formal undertakings there is considerable room for misunderstanding and, in the absence of rigorous systems of documenting and recording community interactions, it is not surprising that there are a range of potential residual commitments that are not at all clear. We have not verified all of these, but examples reported to us include:

- some of the temporary accommodation used during construction was destined for community use though that was never followed through
- more recently, a health program was to be extended to Normanton to achieve community health improvements but action on that stalled
- the undertaking to have at least 50% of Karumba staff residential rather than FIFO has not been fulfilled.

Some such undertakings have lapsed because of discontinuities in operating company, or relevant personnel; some were perhaps founded on a misapprehension or wishful interpretation; and yet others were very vague and did not have timeframes or other details adequately specified. It is therefore not possible to record all commitments, but documenting some examples in various categories will give a sense of issues to address and also of the levels of clarity, recording and documenting that is advisable with regard to future interactions and undertakings. It also highlights that there will be a continual need to explore expectations that have been raised during approvals, development or operation, by various parties and that have not been fully documented or recognised.

In terms of formal commitments under the GCA, there are a number of specific clauses that MMG has not fulfilled yet. A major outstanding one on which Aboriginal owners want to see progress is a 'Keeping Place' for artefacts collected from the mine site and also from Lawn Hill National Park. Under the GCA Schedule 4 Clause 69(h), the company committed \$100,000 (indexed) for planning and establishment of this cultural heritage repository (subsequently supplemented with a further \$450,000); however agreement on an appropriate site and function has not been reached and this commitment has not been realised. As well, there was a prevalent sentiment that there was a commitment to a stronger program of cross-cultural induction at the mine site than is currently delivered and that the proportional distribution of jobs across the Native Title Groups has not fulfilled the spirit of the Agreement.

Voluntary commitments

There were some voluntary activities of the company that were widely regarded as informal commitments and that were unfortunately ill-defined leaving room for confusion about what will remain and what will go as well as about the details of who benefits and procedures for accessing the benefits. Notable among these were free flights to community members/family members of Century employees and in-kind support to the Bidunggu community. It was reported to the interviewers that Century services the Bidunggu generator regularly and has also replaced the generator in the past. Century currently delivers fuel to Bidunggu on a regular basis (around every six weeks) to fuel the generator which supplies the community with electricity (neither Bidunggu nor adjacent Gregory Downs are connected to the power grid). It appears that Century has also assisted with maintenance of the houses and other community infrastructure in the past but has reduced its level of assistance with supplementary services in recent years.

Informal commitments

One way of expressing a commitment is through public statements (for example in the media, local newsletters and on signs). In this vein, the Karumba State School would like MMG to provide signage recording the company's assistance with the library courtyard. However, there are some signs in the region referencing support from Century, or from one of the operating companies though activities are irregular or have ceased. These include:

- Lawn Hill National Park recycling collection: At the time of fieldwork, the rubbish collection at Lawn Hill National Park hasn't occurred in months and the bins were overflowing – the sign said that Zinifex had an agreement with the national park to collect the rubbish.
- Doomadgee rodeo: NPC is currently the major sponsor and widely recognised as such. However resentment was expressed towards Century for not having contributed sufficiently towards this event, even though the rodeo organisers had built a sign saying "sponsored by Century". Community members have reportedly torn down the sign.
- Doomadgee kids' club: This building is also reported to have a big sign saying "supported by Century mine" though it is in such an appalling state that no one can do activities there.

Closure-specific commitments

Given the end of production is approaching, many of the formal and informal commitments that were raised with the CSR team related to timelines and transition-planning around closure. There seems to be an understanding that Century is committed to transition arrangements that will cushion the reductions in flights, health and emergency services, and employment and training. Through the Century Environment Committee (CEC), the General Manager's 'State of the Nation' reports and other avenues, informal commitments have been understood in a number of respects. However there are already contradictory understandings of the commitments emerging. For example the commitments in terms of future workforce needs and training and case management for current employees around career options so that they can move to other occupations, or into post-mining operations and caring for country are vague. As well people understand the company will give preference to locals for rehabilitation work, but not what the nature or extent of that might be nor any constraints on that informal commitment.

There is a commitment to continued efforts to support business development by supporting ADBT operations for the full 20 years until 2018. Some envisage this as implying assistance with development of a transition plan for business support (especially Indigenous business support) that

might occur through an independent ADBT and also more broadly through stronger coordination of a range of organisations (including Enterprise Connect, Indigenous Business Australia, Gulf Savannah Development, and the Gulf Savannah Business Enterprise Centre) – and ensuring a voice for Native Title Groups in whatever configuration of economic development organisations operates in the region in future.

This commitment to stronger coordination and to working to support other regional stakeholders and forums to achieve a firmer base for continued development post-production applies in other respects as well. For instance Century was reported to have given informal undertakings to support Councils in negotiation and efforts around power, telecommunications and road infrastructure.

Meeting International Council on Mining and Metals (ICMM) Principles

Besides meeting formal commitments under the GCA and other obligations to the Government as regulator and to personnel as a responsible employer, MMG has made voluntary commitments to Industry standards as enshrined in the 10 Principles of Sustainable Development adopted by the International Council on Mining and Metals (ICMM). The ICMM is a membership organisation bringing together 21 of the world's largest mining and metals companies as well as 33 global, national and regional mining associations.

Closure planning presents an opportunity to consider specific measures consistent with these principles in the years after production ceases. The principles interrelate and all company functions of the operation are implicated as is evident in **Appendix 8**. For this social impact assessment, attention is focussed on Principles 9 and 10 which the ICMM have endorsed as critical to getting closure right:

*Increasingly today, however, management looks to **community ownership of the post closure goals** as the well of energy that will permit closure initiatives to prosper when the mining company is no longer involved. To achieve this, **community engagement is needed when scoping the challenge, conceptualizing the solution, implementing the design and verifying the outcomes**. In addition to increasing the level of credibility, this establishes partnerships to drive success and, in doing so, creates a forum for transparency. (ICMM 2008 Planning for Integrated Mine Closure: Toolkit p. 4. Emphasis added)*

Actions that MMG can take in accord with the ICMM principles to improve community investment and stakeholder engagement plans are suggested in **Appendix 8**. **Appendix 10** provides a template for working from the current situation to formulate desired social objectives at closure and the partners and resources that can be harnessed in that effort. This will also serve as a starting point for action planning on priority community investments.

The Impact of Completion of Production and Mine Closure

The expectations and concerns outlined in the previous sections highlight that a range of stakeholders will be impacted to a greater or lesser degree by the changes ahead. The ramifications of closure will be felt throughout north Queensland since the mine influences Townsville, Mount Isa and Cairns for instance. However it is the less populated, less diversified and less prosperous region in the Lower Gulf itself that will be most affected.

The list of possible changes is long and includes: increased unemployment and welfare dependence; decreased economic activity; reduced funding to community development programs; deterioration of community infrastructure and local recreational facilities; demographic changes in towns; reduced household incomes; decreased local school enrolments; fewer education and training options; increased demands on community organisations and local social services and rising costs of essential service (e.g. fuel, power, telecommunications and water); and a shift in available employment opportunities to tourism, services, government and cattle grazing). Most of these impacts will disproportionately affect local Aboriginal people. The four CSRSM reports produced earlier in 2013 give details of these potential impacts and they are summarised in Tables 8-12.

Although there is considerable uncertainty about future possibilities, it is important to explain options widely and consult about the pros and cons of each rather than wait till firm decisions have been made and definitive answers can be provided. This consultation can be a forward-looking exercise that considers how to build on the cumulative impacts of the mining operation, protect those regional assets that are of most value and determine social objectives for closure (See **Appendix 10** for a template of how this might be done).

Potential economic impacts

Century Mine contributes directly to the regional and state economy through the purchase of labour, goods and services. Although much of this money flows to Townsville, Mount Isa, Cairns and further afield, the reduced demand for these goods and services will be most keenly felt in the local government areas of Burke, Doomadgee, Mornington Island and Carpentaria. Communities where fewer employees reside (Mornington Island and Doomadgee) may experience less direct impact from staff reductions than, for example, Normanton. Other ventures e.g. tourism and a proposed abattoir may offer alternative employment opportunities.

Alternative contracting opportunities will also be needed especially for Indigenous businesses associated with the mine, as they may struggle to extend work beyond being a supplier to Century. One reason is the difficulty that Aboriginal companies may have negotiating work on land where they are not the traditional owners or in the absence of an access agreement.

The few successful non-mine-related Indigenous businesses may also suffer indirect effects. These have been on too small a scale to provide the basis for a thriving regional economy post-Century. Hence it would be advantageous to foster strong connections to the region's business networks and on-going business support from diverse sources.

Table 8: Potential economic impacts of completion of zinc production and eventual mine closure on Lower Gulf communities

Asset Group	Description of impact
Economic	<ul style="list-style-type: none"> • Loss of wage incomes for employees who are laid off with consequent effects on household incomes • Indigenous (and other) enterprises in communities lose business as overall disposable income decreases • Century’s spend in the four Shires will be reduced particularly impacting on the 14 major contractors and suppliers. • Rates and payments to Shires will be affected (Century’s rates currently account for about 30-40% of Burke Shire’s rates base). Although applicable rating level post-production is not clear, other payments such as for road maintenance will reduce in line with reduced usage. If current Century employees resident in the Gulf change employer and leave the region, this may further impact on rates and shire income. Overall a significant negative impact can be anticipated especially in Burke Shire • Annual production royalty to the Queensland Government will cease • Payments to Native Title Groups under the GCA will cease as of 2019 based on current estimates of end of production • Funding to the Aboriginal Development Benefits Trust (ADBT) will not continue beyond 2018 (being 20 years after first payment) • Costs for residents of many essential services (fuel, freight, gas, power, and telecommunications) are already increasing and there is potential for reduced demand from a major regional customer like Century to exacerbate this.

Potential Impacts on physical assets and infrastructure

The region still suffers from inadequate infrastructure to support business, including workers’ accommodation, banking facilities, transport, power and communications infrastructure and services. Existing essential service levels and community infrastructure may not be maintained.

There are many unanswered questions in these respects. For instance, there is no clarity around future governance and administration arrangements for Bidunggu. Water supply, waste disposal, shelter, transport and access, communication networks and power supplies are all particular issues for outstations. Transport and freight arrangements are also vulnerable. Levels of flight services that commercial operators will be able to offer to remain viable are unknown but the net effect is likely to be more expensive and less frequent air services.

Councils are wary of being left with responsibility for dealing with degrading mine-related infrastructure. However, it would be a retrograde step for the region to be stripped of valuable assets. Where possible, infrastructure such as power, telecommunications, and even more specialised items like the pipeline and corridor, should be retained. Although this will require negotiations (e.g. between the State Government, Ergon Energy and Century for power), resources should be directed to retention and extension rather than decommissioning and withdrawing so as to support future projects in the region.

Table 9: Potential impacts of completion of zinc production and eventual mine closure on physical capital of Lower Gulf communities

Asset Group	Description of impact
Physical /Infrastructure	<ul style="list-style-type: none"> • MMG’s physical assets in the region (worth \$2.5-\$3billion) including water storage structures, pipeline, building and plant must be removed from the site prior to mining lease surrender, unless there is written transfer of assets and liability to a post mining landholder. • Community services and infrastructure may be impacted with reduced income to Shires e.g. maintenance of recreation facilities etc. • Current voluntary support of Bidunggu will not continue indefinitely and sustainable formal arrangements are not in place. • Upkeep of access road in doubt and likelihood of other road upgrades (especially sealing of road from Gregory to Burketown which would assist tourism development) may diminish post-closure. • Century charter flights will be reduced significantly; a different type of plane and fewer flights will service the region. • If the Lawn Hill airstrip is not maintained, emergency service flights would be disrupted and freight and commuting by residents of Gregory and staff of LHRPHC and Boodjamulla National Park would need to rely on the road network. • Diminished use of the port facilities at Karumba could have impacts (e.g. on frequency of port dredging and on retention of load-on facility as an industrial zone). • There are already empty MMG houses in Karumba – disposal of these assets could depress the property market. • Using Darimah Village post-production requires arrangements for mixed use, satisfaction of safety requirements and agreements around responsibility and maintenance • Future of other infrastructure servicing Century such as the high voltage power line from Mount Isa to the mine is in doubt. • The ‘Shed’ and other port facilities at Karumba will need alternative uses and firm arrangements around adaptation (potential changes for processing a new commodity) and maintenance responsibilities. • Pipeline and pipeline corridor are valuable industrial assets that may be decommissioned and lost to the region if no alternative user is found.

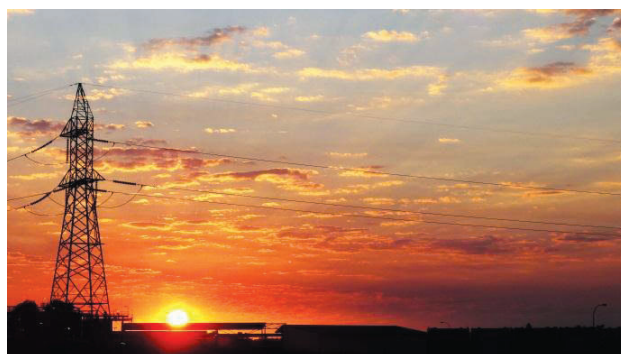


Image: ‘Clouds’
- Alex McGregor (Century)

Potential impacts on natural capital, environment and lands

A change of emphasis in environmental management will be integral to the post-production phases. Environmental protection measures may be ineffective if strong working relationships have not been built between Century Environment Committee, National Parks, Southern Gulf Catchments and other relevant groups.

Without broad participation in, and reporting of, environmental monitoring measures, there will be little confidence in the monitoring regime. Concerns are likely to remain about the cumulative environmental harm, especially to waterways and the harbour at Karumba, but also along the pipeline and at the mine itself. The pipeline, Karumba facilities and contaminated land may leave Councils with the responsibility of dealing with environmental issues.

Waanyi rock art and other cultural heritage sites in the vicinity may need new arrangements to be adequately protected with a reduced Century presence.

Some permanent changes to the landscape may compromise significant sites or cultural practices.

Table 10: Potential impacts of completion of zinc production and eventual mine closure on the land and environment of Lower Gulf communities

Asset Group	Description of impact
Natural – Land and Environment	<ul style="list-style-type: none"> • Lawn Hill and Riversleigh Pastoral Holding (LHRPHC) will continue managing extensive pastoral lands. Relatively undisturbed and uncontaminated parts of the lease could have post-mine land use as low-intensity grazing land (but maybe not until lease relinquishment) • There will be areas of disturbed land to reform, stabilise and manage especially during the active closure phase. Some (e.g. waste rock dumps and pit) may be permanently alienated. • Water quality, control of weeds and feral animals, fire regimes etc. will all require on-going attention • Pipeline area and port area raise specific environmental challenges around potential contamination • The Century Environment Committee will continue until relinquishment of the mineral lease (currently targeting 2046) • Waanyi Native Title Group has aspirations to progressively partner in managing their determined land in the region and especially in relation to Lawn Hill National Park.

There are high hopes of maximising involvement of Native Title Groups, in particular the current workforce, in environmental management after production ceases. However, there are limitations in terms of the specialised expertise and equipment needed for some of the rehabilitation work, the seasonal nature of the work and the small number of jobs. ‘Caring for country’ and ‘ranger’ roles are attractive for Gulf residents but have shortcomings since much of the work is seasonal and so lacks job security, which in turn has flow on effects like compromising credit ratings for instance. Century can help address this by working with other land holders and agencies in the region that require environmental management services to create post-production employment in a core of full-time equivalent jobs.

Potential impacts on human capital

Maintaining the skills, knowledge and well-being of people in the region and continuing to improve the stock of human capital will be very difficult once zinc production ends and a large and specially trained workforce is no longer needed.

Employability and career pathways after completion of production are not assured for those without formal qualifications or skills transferrable outside of the mining industry. Those unable to find alternative employment in the region may either go on to welfare, or leave the region.

Household incomes will change for those affected by the inevitable job losses. This will pose difficulties in terms of both reduced income and loss of self-esteem. Very little of the increased income associated with mining employment appears to have been converted into savings or long term assets so personal debt may increase.

Despite significant exploration by MMG and other companies, for example in nearby Dugald River, no new mining activity is yet proposed for the region. This considerably reduces the range of mining-related employment options to Gulf residents and means that, in the near future at least, FIFO work with a longer commute time is likely to be the most promising option for those wishing to continue working in the mining industry.

Table 11: Potential impacts of completion of zinc production and eventual mine closure on the human capital of Lower Gulf communities

Asset Group	Description of impact
Human	<ul style="list-style-type: none"> • The impact of job losses will be particularly felt among the 150 Gulf residents employed at the mine (over 130 of them being from Native Title Groups) and also by any cuts to the other 120 or so GCA positions occupied by Native Title holders living outside the Gulf. • Training programs and development of skills at Century will be largely lost e.g. no new apprenticeships. • Potential for demographic changes as ex-Century employees who relocated out of the region to return, but also for population of some centres to decline further with flow-on effects to matters including school enrolments and service provision. • With fewer employment opportunities, the reported positive influences of employment and training such as increased self-esteem and confidence, increased work ethic and motivation and leadership capacity, may reverse. • Indigenous apprentices and trainees face the possibility of the production ceasing prior to completing their qualifications. • Some experienced mine workers face the prospect of seeking employment without formal qualifications or ‘tickets’ that more training and career progression would give. • Health benefits from working at Century such health checks, health education, first aid training, alcohol and drug awareness, access to gym and sporting facilities, access to a range of nutritious food will be lost to those who can’t continue in employment. • Local school enrolments may decrease further (e.g. Karumba has very low enrolments and residents fear a similar fate to the Gregory school which closed).

Potential impacts on social and institutional capital

The social fabric of communities in the region is influenced by a complex and interrelated array of factors, many of them much stronger and more direct than the presence of the mine. Nevertheless there are likely to be some negative effects on community and institutional functioning associated with closure. A prime objective is to avoid fuelling a cycle of limited opportunities, unemployment, welfare dependency, and depression.

Maintaining cultural knowledge transfer will play an important role. The mine’s facilitation of visits, use of cultural monitors and impetus for the Keeping Place project to store cultural artefacts and serve as a cultural heritage focus will make important indirect contributions. As well, it is not too late to support capacity building of local organisations with an enduring role to play.

Table 12: Potential impacts of completion of zinc production and eventual mine closure on the social and institutional resources of Lower Gulf communities

Asset Group	Description of impact
Social/ institutional	<ul style="list-style-type: none"> • Century sponsored community programs, charities, community organisations, sporting activities and community events will no doubt reduce. Sponsorships and partnerships currently total \$100,000 annually and benefit 20-50 organisations/ events • Community organisations may decline and the limited funds controlled by Eligible Bodies will be reduced since payments end 3 years after production ends – at current estimates that will be 2018 • Demands on local social services may increase with demographic changes and with greater welfare dependence • No Century flights for community members to access. There are currently 2,500-3,000 Century sponsored visitor flight sectors for community members per year. This will make it more difficult for local residents to maintain connections in and outside of the region.

Mitigating the impacts of completion of production and mine closure

The potential negative impacts of the changes associated with transition to closure, as outlined above, all pose risks for the Lower Gulf communities or segments thereof. Mitigating the direct negative impacts of closure – especially on employees and supplier businesses – should be a priority for MMG-Century.

At the regional level, the focus needs to be on working with partner organisations to plan and implement integrated activities that harness the region’s assets and simultaneously provide economic benefits, maintain local infrastructure, care for the natural environment and improve local communities and institutions.

It is possible to prioritise matters to address using a risk management approach (Table 13). There are a range of options for managing the risks and minimising negative impacts that also present opportunities to leave a positive legacy. These are outlined in the next section.

Table 13: Sample risk management approach for mitigating the impacts of closure

Theme/ issues	Description of risks	Likelihood (1-5)	Consequence (1-5)	Priority	Risk management options	Relevant communities /populations
Viability of economy	Loss of business for contractors	4	4	H		
Condition of Infrastructure	Deterioration of road infrastructure	2	3	M		
Public health	Less nutritious food consumed	1	3	L		

Sustainable Legacy Opportunities

The Century experience highlights the challenges associated with developing regional economies and cohesive communities in remote areas. Notwithstanding a number of positive impacts from the mine for individuals and businesses involved, and a total injection to the regional economy of probably half a billion dollars, the region remains under-developed in many respects to maintain the associated jobs, services, revenue, infrastructure and improvements. Many individuals and a number of businesses have benefitted from the mine, and probably half a billion dollars has been injected into the regional economy. Despite this, the Lower Gulf region remains under-developed in many respects. This situation will be compounded and when production ceases, as most jobs associated with the mine will disappear, revenue flows to local government will be reduced, some key infrastructure is likely to be decommissioned, and other services may be reduced or cease. There is a risk that too little sustained benefit will have been leveraged from the mine’s operation at the time when production ceases.

The remaining years of production and the ensuing period of active closure provide one last opportunity to secure the foundations for future regional development. However, for this opportunity to be realized and the gap between Australian society and Lower Gulf residents – particularly those in Aboriginal communities – in areas such as health and education to be reduced, requires a more strategic approach to social investment by the company, better aligned government programs, improved community governance and more effective representative bodies. Above all, a collaborative and coordinated effort by the company, the State Government, regional organisations including bodies representing Native Title Groups and other Aboriginal organisations will yield the best results. Wherever possible, efforts to enhance Century’s legacy should be consistent with other plans and strategies and should complement, or even partner on, the initiatives of other bodies (see **Appendix 5** for key examples).

Central to the long-term legacy of the mine will be strategic investment and capacity building to ensure that appropriate and viable business and employment opportunities exist and that individuals, local communities and governance bodies are equipped for a post-mining future. A major challenge now facing MMG-Century is how to contribute to identifiable benefits flowing to communities and especially how to sustain meaningful benefits into the post-production phase. This is particularly the case with respect to Doomadgee and Mornington Shires.

A number of legacy opportunities were identified in previous CSR Reports (February 2013). These were reiterated in “Proposals from CSR Reports 2012: Opportunities to maximise realisation of GCA aspirations. For GADC use in consultations Aug-Sept 2013”. Those documents give details on suggestions outlined only briefly below. Many of these initiatives will need the support of key stakeholders and will require collaborative efforts. Leaving a lasting legacy is a process that needs to consolidate and build on successes to date using a community development approach as illustrated in Figure 9.

Key characteristics of a community development approach are:

- utilising and enhancing the region’s asset-base in terms of the five capitals
- engaging community and fostering broad participation;
- building capacity and avoiding dependence;
- leveraging input from government and other agencies rather than substituting for them; and
- adopting a long term outlook and strategies that will extend benefits broadly through the communities and beyond the life of the mine.



Figure 9: Dependency to Community Development (Source: Zandvliet & Anderson, 2009, p.265).

Opportunities to mitigate closure impacts and leave a positive legacy

To mitigate the direct impacts – especially on existing employees and supplier businesses – there will need to be retraining, job-placement assistance and efforts to maximise the role of local Aboriginal people in new work requirements associated with the transition to closure. While the analysis in this SIA has focussed on separate asset groups (the five capitals), this is a somewhat artificial exercise and the emphasis in future planning and program implementation should be on integrated activities that can mitigate negative impacts and contribute to positive outcomes across a number of inter-related areas.



Figure 10: Integrated development strategies offer multiple benefits

An integrated approach strives to achieve a number of objectives simultaneously (Figure 10):

- Economic benefits – for employees; for local businesses and contractors; for the regional economy as a whole
- Adequate and well-maintained infrastructure, buildings and technology
- Stewardship of land, the natural environment and pastoral leases
- Maintenance of cultural sites, artefacts and cultural heritage
- Community welfare and social and institutional improvements
- Development of human capital – education, health, skills, leadership

Short-, medium- and long-term actions to minimise mining dependency and promote alternative economies could include linking with a regional industry forum to coordinate initiatives, establish employment and training programs and counselling services for retrenched employees, and engage with stakeholders over proposals for post-mining land use and infrastructure needs.

Models that may be appropriate include the Mount Isa Region Industry and Infrastructure Key Managers Forum that includes not only regional managers of State Government but also key contract holders, industries, job providers and trainers. Regional Planning Advisory Committees are another form that would be relevant since they typically include representation from multiple levels of government and from the private sector and civil society. A Regional Organisation of Councils is a further option though these are usually restricted to local government and so may lack the breadth of involvement that would be ideal, though it would provide good local level expertise and coordination.

Certainly there are a number of strong, accountable organisations in the region that would be valuable partners for projects prioritised among the many that generate local enthusiasm. There are also, as detailed earlier in this report, a range of regional assets which can be harnessed to successfully implement projects of regional benefit. However collaborating agencies, companies and groups would need to ensure their strategies were also able to access and utilise, or maintain other requisites of a thriving post-mining region (Figure 11).

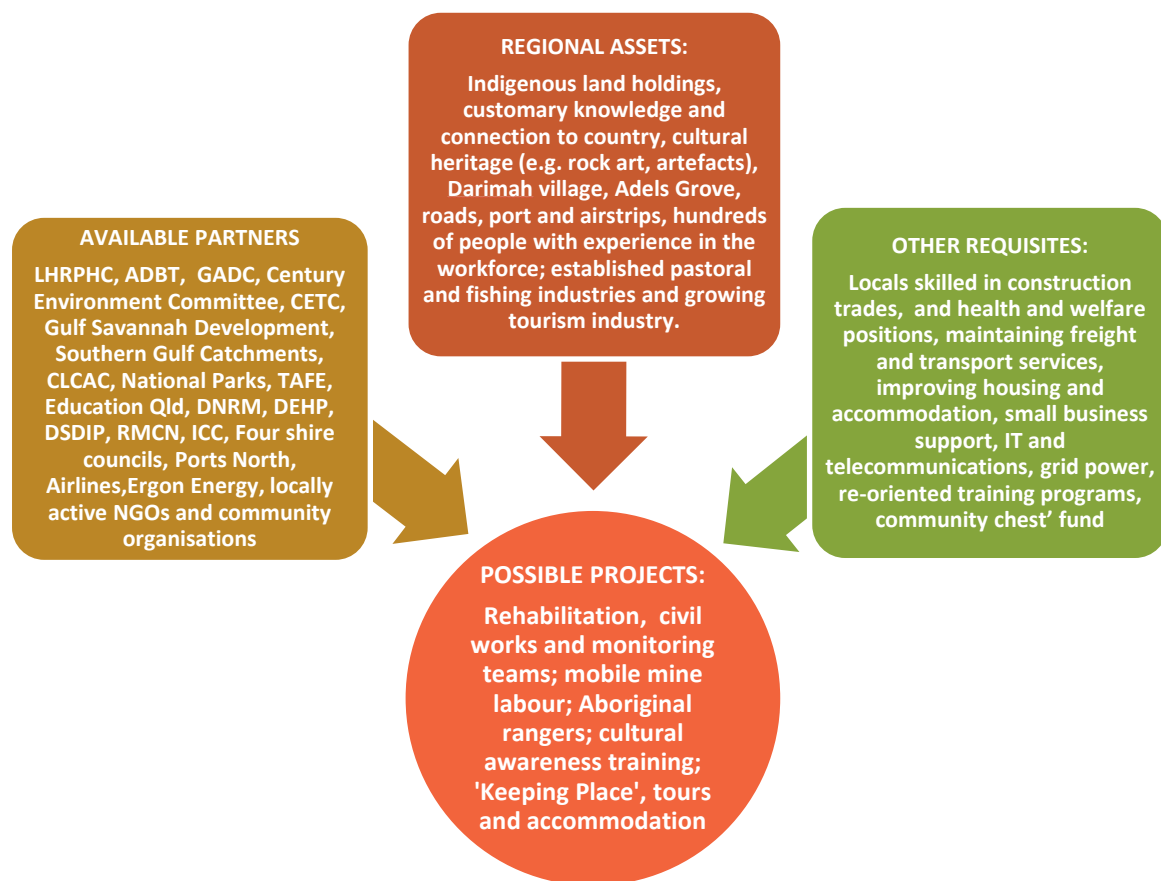


Figure 11: Various projects can be delivered by assets-based community development

There are examples within the North-West Queensland Region of some projects of this kind (Figure 12) and it will be important to support and further develop these where possible as well as to foster new initiatives in the Lower Gulf Region.

CASE STUDY OF INTEGRATED PROJECT

1. Delta Downs (Morr Morr Pastoral Company)

Owned by Kurtijar Aboriginal Corporation.

A functioning cattle station offering training programs and expanding into tourism with wetlands experience, Aboriginal cultural experience and station stays.

(Similar diversification may be feasible for LHRPHC and could eventually include tours of the 'historic' Century Mine site)

CASE STUDY OF INTEGRATED PROJECT

2. Myuma Aboriginal enterprise, training and cultural heritage

Indjalandji / Dhidhanu Aboriginal Corporation

Civil construction, plant hire, labour hire and training

1) has large-scale contracts with government or private enterprise fulfilled with largely Aboriginal labour

2) hosts the Aboriginal labour onsite with accommodation, meals and a social and service environment that is culturally appropriate

3) provides accessible and relevant training courses to the labour pool

4) multiple enterprise and training contracts mean stable continuity of employment and training.

CASE STUDY OF INTEGRATED PROJECT

3. Waanyi Nation Aboriginal Corporation

WNAC owns Northern Project Contracting (NPC) which offers contracting and training services for the energy, civil construction and mining industries including MMG Century. Examples include crushing, mine rehabilitation, labour and plant hire, haulage, civil works and construction.

Profits received from NPC's commercial projects support a range of significant development initiatives in Indigenous communities. These include language and culture projects, community sporting and cultural events, Indigenous education and training scholarships and the establishment of infrastructure and business to support Waanyi people in the post-mining environment.

POSSIBLE INTEGRATED PROJECT

Waanyi Keeping Place

The Keeping Place could house artefacts collected from the mine site and Lawn Hill/ Boodjamulla National Park. Waanyi people could be involved in designing and building the Keeping Place and in identifying, sorting, and preserving cultural knowledge and items that could be shared to increase cultural knowledge in younger generations. It could also have custodianship of rock art heritage sites. As well, it could be linked to the National Park and, as a tourist interpretation centre, it could provide economic opportunities.

Figure 12: Case studies of integrated projects

A number of factors underpin the success of these examples including:

- Successful native title claims giving an initial set of economic assets (land).
- An inclusive approach to spreading the enterprise benefits beyond an extended family group to other beneficiaries in the local Aboriginal community
- Ability to attract strong government support and local and regional legitimacy.
- Integrating into the local and regional economic market, both government and business sectors
- Enterprise capacity and a sound business strategy
- Leadership skills, involvement of respected elders, good management and governance
- Strategic partnering with and support from 'outside' groups to build capacity
- A reputation for professional levels of performance, generating widespread respect from both industry and government.
- Including culturally sensitive training to ensure 'not just job readiness, but having jobs ready' for the Aboriginal trainees.

(Memcott 2009 *Demand-responsive services and culturally sustainable enterprise in remote Aboriginal settings: A Case Study of the Myuma Group*)

Wherever possible these factors should be harnessed or fostered in all future activities.

Mine rehabilitation and monitoring

Schedule 2, Clause 77 of the GCA explicitly commits the company to encourage Local Aboriginal People and Local Aboriginal Corporations to submit tenders for rehabilitation work and assist them in building capacity to compete successfully for such work. Significant opportunity exists for creating a sustainable legacy through use and development of Aboriginal capacity to plan, undertake and monitor the mine rehabilitation and ongoing environmental monitoring program on the mine site.

A strategic approach would build on existing Aboriginal capacity as well as introduce additional skills and expertise and stimulate the formation of new Aboriginal groups to undertake environmental work not just for the mine, but for agencies such as National Parks or the region's pastoral properties and Shire Councils.

Establishing a process to engage a broad group of Aboriginal people with traditional responsibility for the area of the mine site in the development of closure plans and rehabilitation would:

- ensure traditional owners' views are incorporated into mine closure including appropriate attention to any cultural sites and issues;
- provide an opportunity to resolve issues early, reducing risk of mismatched expectations;
- obtain endorsement of plans from the Aboriginal community ; and
- open a proactive point of engagement with those traditional owners who currently feel excluded.

Planning and Managing for Closure: Recommendations

The Combined Report and its Supplements produced by CSRM earlier in 2013 identify a number of opportunities and report several suggestions that community members made to the researchers. Many of these warrant investigation as to how feasible they are and whether they focus on strategic community development and can be implemented in a transparent and inclusive way.

The recommendations below should be read in conjunction with the opportunities and suggestions in those earlier Reports. Mine closure planning should prioritise these recommendations and develop them into mature action plans for implementation. The recommendations are directed primarily to MMG-Century as the organisation which commissioned this study. However, where appropriate we have also included some recommendations that include, or are directed to, the State Government – particularly in relation to broader issues around the development of the Lower Gulf following the cessation of production at Century. Indeed, many of the action plans for implementing priorities will be best achieved by working with relevant partners including those in **Appendix 5**.

Enhancing Century's contribution to Aboriginal Workforce Participation

Recommendation 1: Redirect employment, training and career planning

Objectives:

- (i) a suitably skilled workforce is retained throughout the transition to closure;*
- (ii) there are skilled people in the communities with a range of relevant competencies (including construction and building maintenance, trades, road construction);*
- (iii) a breadth of future employment and career options are available for current employees and other residents of the Lower Gulf Region.*
- (iv) employees who wish to continue working in mining are supported to build on their experience at Century to advance that career path*

Key proposed actions:

Transitioning the Century workforce

MMG to:

- **Prioritise GCA employees with proven skills and aptitude for post-production jobs and specific roles needed during transition to closure, especially rehabilitation and environmental management, and, where necessary, help equip workers for these new roles.**
- **Broaden occupational experience and training for GCA employees, including by providing 'tickets', to ensure they develop transferable skills and are job-ready for positions in mining but also a range of other fields appropriate to the regional economy.**
- **Provide career planning, life-skills, financial management and adjustment support to GCA employees who are likely to face changed employment circumstances.**
- **Target promising GCA employees for supervisor and manager training and career advancement.**
- **Ensure that any contracts that are let in relation to mine closure and rehabilitation include a requirement that hiring preference be given to current Century employees and local Indigenous people more generally.**

- Work with Remote Jobs and Communities Program (RJCP) providers to facilitate relevant community-based training for former employees and to replace mine pre-vocational traineeships.

Strengthening the regional workforce

- MMG, State Government, and regional vocational training providers, to work together, in consultation with Native Title Groups (through CETC), to establish revitalised and realigned vocational training programs. These programs should:
 - Provide participants with skills training and especially ‘tickets’ and qualifications that increase employability and are aligned with regional workforce needs
 - Link with mainstream education and training in the Lower Gulf and broader initiatives to boost Indigenous work-readiness and open diverse future career paths
 - Aim to build a new skill base in the region focused on rehabilitation and land management on the one hand and service industries on the other especially human services, trades and maintenance services and tourism services.

Enhancing Century’s contribution to Aboriginal business participation and economic development in the Lower Gulf

Recommendation 2: Collaborate to support existing local businesses and facilitate business incubation

Objective: Existing local businesses are assisted to transition to the post-production phase and new opportunities are created in the region for viable and self-sufficient businesses.

Key proposed actions:

MMG to:

- Work with ADBT and other organisations, such as Indigenous Business Australia (IBA) and Enterprise Connect, to provide transition support for locally based businesses which are currently wholly or partly dependent on the mine.
- Seek to maximise the involvement of local businesses in closure-related work at Century and Karumba. Specific actions that can be taken to further this objective are:
 - Initiate a review of work requirements around mine closure, rehabilitation and ongoing monitoring to identify potential opportunities for local contractors and suppliers and for local indigenous businesses in particular.
 - Conduct a scan to identify local businesses that may be in a position to undertake this work and communicate these opportunities to the organisations concerned.
 - Link interested businesses with organisations that may be able to provide support and advice in accessing identified opportunities; for example, ADBT, IBA and Enterprise Connect.
 - In assessing tenders, give a weighting to locally-based businesses (subject to them meeting core tender requirements)
- Work with ADBT to ensure that it remains a viable entity beyond the completion of mining
- Participate actively in initiatives to support the development of longer term business opportunities in the region, such as the North West Queensland Indigenous Resource Industry Initiative (NWQIRII), regional economic development planning and initiatives of

Gulf Savannah Development and the Mount Isa Townsville Economic Zone's (MITEZ) North-West Regional Strategic Planning.

- Fund an organisation with expertise in business facilitation in remote or Indigenous communities (such as the Sirolli Institute or RSM Bird Cameron) to conduct community workshops and provide follow-up support.
- Work with LHRPHC to consolidate the pastoral business and develop a diversification strategy for the pastoral holding, using programs for Indigenous business facilitation as a possible source of development funds. There is potential for multiple strands: a profitable pastoral enterprise with other economic and employment functions (e.g. tourism) as well as other benefits to the Waanyi Native Title Group from their lands including cultural maintenance, environmental stewardship and possibly training programs.

Enhancing Century's contribution to regional environmental management

Recommendation 3: Lay foundations for long-term environmental stewardship

Objective: Strong community involvement in caring for a rehabilitated and healthy environment.

Key proposed actions:

MMG to:

- Ensure the Century Environment Committee (CEC) is maintained as a suitably resourced and well-functioning forum and has the capacity to engage effectively with rehabilitation, caring for country and other environmental monitoring tasks. If the CETC is disbanded at the end of production (as signalled in the GCA) the CEC's role will need to be expanded to include facilitation of local employment in rehabilitation, care and maintenance work.
- Through the CEC and other means, actively engage Aboriginal people with traditional responsibility for the area of the mine site in the development of closure criteria and rehabilitation design and activities.
- Participate in and liaise with regional land and environmental management programs that involve Aboriginal people in management and use of their traditional country, with a view to identifying opportunities to extend some of these programs to the mine lease and surrounding areas. Relevant programs might include those managed by North Australian Indigenous Land and Sea Management Alliance (NAILSMA), Carpentaria Land Council Aboriginal Corporation (CLCAC), Southern Gulf Catchments and the National Parks and Wildlife Service.
- In liaison with established Ranger programs, build a team of GCA employees with environmental management skills relevant to rehabilitation work, caring for country and cultural heritage protection. The initial focus of this team would be managing issues associated with the closing of the mine, but in the longer term there may be opportunities to offer services on a commercial basis to meet the broader land management needs of national parks and pastoral companies in the region.

The State Government to:

- Support training and mentoring to prepare Waanyi for joint management of Boodjamulla National Park.

Enhancing Century's contribution to cultural appreciation

Recommendation 4: Support maintenance of culture

Objective: Cultural heritage considerations integrated into all closure-related operations and maintenance of the vibrant Aboriginal cultures of the Lower Gulf Region.

Key proposed actions:

MMG to:

- Continue with efforts to establish a 'Keeping Place' for cultural artefacts and traditional knowledge. This will require:
 - resolving with the Waanyi Native Title Groups a suitable site for the 'Keeping Place';
 - developing agreed plans for the form and function of the 'Keeping Place'; and
 - constructing the centre (preferably using local Indigenous contractors) with funds already earmarked for this purpose.

The Keeping Place could also offer some commercial opportunities including tourism.

- Support current providers of internal cultural awareness training at Century to develop the capacity to service on a commercial basis a wider client base (e.g. other companies, government).

Enhancing Century's community relations

Recommendation 5: Proactively communicate and engage with diverse stakeholders

Objective: Engaged and well-informed stakeholders who are kept up-to-date with open and informative communication and who identify with post-mining goals and are engaged in shaping the post-mining future of the region.

Key proposed actions:

MMG to:

- Develop a communications strategy for providing regular, timely, and informative updates to the workforce and various stakeholder groups in the community on aspects of current operations, developments and potential scenarios that are relevant to them.
- Ensure that, in formulating action plans and taking decisions on important issues (e.g. about post-mining forms and functions of land and infrastructure) it canvasses options widely and consults in advance with stakeholders about the pros and cons of each option, rather than waiting until firm decisions have been made and definitive answers can be provided.
- Use a range of participatory techniques (stakeholder mapping, community monitoring etc) to involve local Aboriginal people and other relevant regional stakeholders in planning, implementing and monitoring the progress towards closure goals and the implementation of Action Plans being developed by MMG-Century and other bodies – notably those involved in response to the GCA 15-year Review. Empower these stakeholders to take action on initiatives in partnership with, as well as independent of, the company.
- Maintain and build capacity within the Community and Stakeholder Partnerships (CSP) team to manage processes of stakeholder engagement that will be needed throughout the post-production period.

Note: useful tools and guidelines for these actions are referenced in **Appendix 9**.

Enhancing Century's contribution to regional infrastructure

Recommendation 6: Help secure community infrastructure for the future

Objective: A well-serviced community with adequate and well-maintained infrastructure, utilities and affordable transport options.

Key proposed actions:

Working bilaterally or through a mine completion taskforce (see recommendation 8), State Government and MMG to develop strategies for the future of mine-related infrastructure and services consistent with overall site closure objectives, legal requirements and agreements or undertakings by:

- Commissioning an independent study to assess potential arrangements and the economic viability of retaining key infrastructure such as the Lawn Hill airstrip, the power line, Darimah Village and the houses and port facilities at Karumba, including consideration of options for alternative uses. This study will need to be based on a comprehensive understanding of timelines, conditions, parameters and constraints with respect to MMG Century's use of these items. In addition, regional stakeholders and, in particular, traditional owners, should be consulted as part of this process.
- Identify potential adverse impacts of the cessation of mining on community infrastructure and services (e.g. on availability of flights, provision of emergency services, road maintenance) and agree on strategies to mitigate these impacts. This strategy needs to address the vexed issue of ongoing support arrangements for Bidunggu.

State Government to:

- Give higher priority to upgrading roads and other key infrastructure in the region (such as by constructing an all-weather road to Doomadgee). This would also have the benefit of creating additional employment and contracting opportunities in the region.

Enhancing Century's contribution through strategic community investments

Note that this group of recommendations proposes discrete actions but, as outlined in the Report, the ideal is *integrated* projects that simultaneously contribute to the economy, cultural maintenance, environment, social fabric, infrastructure and human capital.

Recommendation 7: Partner to improve health, education and community development

Objective: Effective and sustainable community initiatives and events in areas highly valued by a broad cross-section of regional residents and representing the company's commitment to the Lower Gulf Communities.

Key proposed actions:

- **Identify and commit to long-term partnerships to support one or two community development initiatives that have proven relevant and successful and can be sustained.** These partnerships could potentially be with a health service or program, school, training providers, community based organisation or non-government organisation. To the extent practical, alignment should be sought with Local Implementation Programs (LIPs) under the Council of Australian Governments (COAG) partnership⁴.
- **Explore with GADC, Eligible Bodies, Gulf Area Community Social Development Trust (GACSDT), State Government and other relevant organisations options to invest in a trust fund or community chest which could be used to support community programs and events into the future.**
- **Continue a program of strategic sponsorships and donations into the passive closure phase as a supplement to community development initiatives. In particular, consider the range of projects endorsed as worthwhile by community members during the CSR's Community Consultations and assess which of these warrant support (see CSR's 2013 reports https://www.csr.com.au/publications?pub_type=&pub_search_authors=&pub_search_keyword=Century&search=publications&task=search).**
- **Include regular opportunities for regional school students to be exposed to mining-related roles so as to broaden vocational awareness and options among the region's students and build links between future regional residents and the mine that may be valuable during the post-production phase when there is limited employment available but community engagement is still valuable.**

⁴ In 2008 the Council of Australian Governments (COAG) agreed to a Remote Service Delivery Partnership whereby all levels of government would work with Indigenous communities to close the gap on Indigenous disadvantage and adopted six targets. Each community works with the levels of government to develop its own Local Implementation Plan outlining actions for achieving these targets in health, schooling etc.

Enhancing Century's contribution to regional governance

Recommendation 8: Strengthen regional leadership and governance especially the GCA governance mechanisms

Objective: More robust local institutional arrangements and governance processes.

Key proposed actions:

Parties to the GCA to:

- Complete the review of governance bodies associated with the GCA (as recommended in the 15-year review of the GCA).

MMG to:

- Take all reasonable steps to ensure that each of the committees operating pursuant to the GCA have clearly defined terms of reference and lines of accountability, meet regularly, and are adequately resourced to undertake the functions assigned to them for the remaining period of their operation.
- Pursue opportunities to develop the capacity of Century employees from Gulf communities who have shown leadership potential (e.g. by providing them with access to mentors and coaches).
- Give further consideration to supporting the formation of a Young Leaders Forum in the Lower Gulf (recommended by the 10-year GCA review, but never fully actioned).

State Government to:

- Ensure that, while the CLAC continues to operate, there is senior, whole-of-government, representation on the Committee.
- Identify a "Ministerial Champion" to drive a cross-government approach to addressing the regional impacts of mine completion.

State Government and MMG to:

- Work together to establish a Century Mine Completion Taskforce to: (i) address and manage the likely regional impacts of mine closure, (ii) harness the resources needed, including by accessing funding from Royalties for Regions, (iii) act as a coordinating mechanism; and (iv) provide a forum for ongoing engagement with regional stakeholders. The Taskforce could potentially be auspiced by a suitably inclusive regional body such as Gulf Savannah Development or Regional Development Australia – Townsville and North-West Queensland.

Conclusion

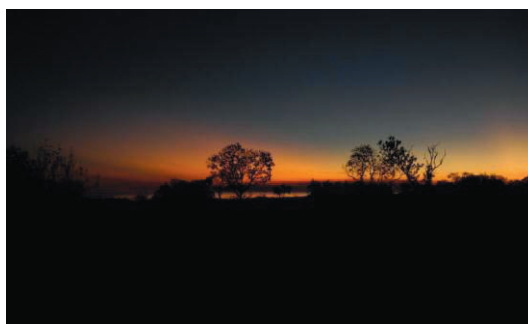
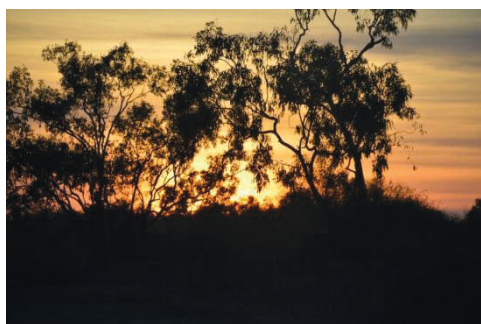
The Century project brought with it some dramatic changes and significant opportunities that were anticipated to last around 20 years. As the zinc ore-body nears exhaustion, unless one of the multiple growth options under investigation is realised, there are likely to be equally dramatic changes over quite a short timeframe despite the extended period of care and maintenance that will follow the end of production from the open pit.

During the closure phase of a mine's life-cycle, employment and contracting opportunities decrease rapidly, and benefits cease to flow but legacy issues continue to affect the community even as people seek to establish alternative livelihoods. Hence the Environment function and the Community Relations function become particularly important.

Given the remaining operational time is short, priorities should be determined among the issues highlighted in this report's recommendations and action plans should be developed to address these. **Appendix 6** and **Appendix 7** provide some tools to assist in preparing mine closure plans and integrating closure into management systems. The social aspects of the closure plan should work from the current state as outlined in this report and plan forward through a number of steps:

- set objectives or social 'closure criteria' (see **Appendix 10**)
- define agreed-upon indicators and measures of success with stakeholders
 - these should focus on outcomes and impacts, not only outputs (that is, what the tangible change will be not what will be spent or done)
 - they should include qualitative measures, not only quantitative
- provide for tracking changes in community perceptions
 - ensure measurements provide opportunities for participation
 - track results for different segments of the population e.g. by gender, by indigenous/non-indigenous
- allocate resources for community investment on the basis of monitoring and evaluation of the effectiveness of supported initiatives
- integrate tracking of community investment outcomes into the company's broader monitoring and evaluation systems

Century Mine has occupied a prominent place in the economy and governance of the Lower Gulf Region for over 15 years and by taking urgent, directed action, focussed on the significant changes ahead – alone and in partnership – it can mitigate negative impacts of the end of zinc production and contribute to some tangible lasting outcomes for local employees, their families and the region as a whole.



Images:
L – Madison Marshall (Burketown);
R – Rodger Barnes (CSR/M)

Images: Left - Sunrise in the Lower Gulf; Right – Sunset at Mornington Island

Appendix 1: Social Impact Assessment (SIA) of closure of MMG Century Mine

Scope and objectives - Stage 2 (2013)

1. Outline statistical and other evidence available regarding the demographics of the Lower Gulf Region pre Century mine
2. Define how Century Mine has served as a platform for change within the Lower Gulf Region and the implications mine closure will have on the region.
3. Define community expectations, priorities and concerns in respect to closure of the Century Mine
4. Determine, to the extent possible, the cumulative impact and total contribution Century has made to the region since development noting the jobs, services, revenue, activities and infrastructure that did not exist before Century.
5. Liaise with mine management to ascertain what formal and informal commitments have been made by management and mine personnel over the years regarding infrastructure, ongoing service provision and other legacies of the operation.
6. Identify and (to the extent practicable) quantify the potential demographic, economic social and governance impacts of the zinc production completion and eventual mine closure on communities associated with the mine.
7. Assess community and workforce knowledge of, and preparedness for, the proposed zinc production completion and eventual mine closure of the mine.
8. Outline the socio-economic context and impacts (both positive and negative) of MMG's presence within the community.
9. Identify practical and actionable recommendations that can help MMG to manage community relations in the lead up to mine closure and beyond.
10. Identify opportunities, challenges and potential mechanisms to mitigate impacts associated with mine closure.
11. Identify improvements for MMG Ltd's existing strategic community investment and stakeholder engagement plans to meet the International Council of Minerals and Metals (ICMM) requirements
<http://www.icmm.com/our-work/sustainable-development-framework/10-principles>
12. To explore and define sustainable legacy opportunities for MMG Century and key stakeholders that optimise social return on investment

Appendix 2: Previous Social Impact Assessments

Dames & Moore, 1994 *The Century Project, Draft Impact Assessment Study Report*, 3 vol, October. Brisbane: Century Zinc Limited

Memmott, P. & Kelleher, P. 1995 *Social Impact Study of the Proposed Century Project on the Aboriginal People of Normanton and Surrounds*, May. Normanton: Bynoe Community Advancement Co-operative Society

Crough, G. & Cronin, D. 1995 *Aboriginal People and the Century Project: the 'Plains of Promise' Revisited?* June. Burketown: Carpentaria Land Council Aboriginal Corporation

Kinhill Cameron McNamara Pty Ltd. 1995 *The Century Project: Aboriginal Issues. Supplementary Report Draft Impact Assessment Study Report*. August. Brisbane: Century Zinc Limited

Miles, R., Cavaye, J., Donaghy, P., Rayner, T., & Marshall, C. (2003) *Post Mine Economy of the Southern Gulf of Carpentaria: Economic Development Following the Expected Closure of the Zinifex Century Mine in 2017*. Institute for Sustainable Regional Development, Central Queensland University and Department of State Development and Innovation.

CSRM 2008 *Completion of Zinifex Century Mine: Implications for Gulf Communities*, July. Brisbane: CSRM

Appendix 3: State of Community Asset Base 1997

It should be noted that there are significant problems with comparing data across a fifteen year time period especially when trying to reconstruct retrospectively. For instance the figures are not always accurate. As well, figures come from different sources, use different boundaries and units and the basis for calculation has changed. In addition inflation complicates comparison of monetary figures. Other qualifications are highlighted in the notes accompanying Table A3.1. For this reason little meaning can be read into the figures reported below on their own.

Table A3.1: Selected indicated of socio-economic conditions in Lower Gulf local government areas 1996, 2006 and 2011

	DOOMADGEE (S)			MORNINGTON (S)			BURKE (S)			CARPENTARIA (S)		
	1996 ¹	2006	2011	1996	2006	2011	1996	2006	2011	1996	2006	2011
Number of Households with no motor vehicle	n.a	46	108	n.a	123	120	n.a	15	12	n.a	74	86
Unemployment (%) ²	9	9.8	13.8	3	4.8	11.5	12	9.8	14.6	15	10.3	12.3
Median personal income (\$ / week) ³	175	227	280	127	209	287	116	671	824	199	461	590
No. of people employed in mining ^{4,5}	0	10	10	0	8	6	0	92	77	0	39	58

Notes:

¹ 1996 Figures: In the absence of a socioeconomic baseline study from 1996, figures above are identified from earlier studies connected with the project (see **Appendix 2**) and 1996 Census data for the region.

² Recorded unemployment rates are influenced by a number of factors including seasonal variations in some industries (e.g. pastoral industry and road maintenance) and the existence of CDEP in Doomadgee, Normanton and on Mornington Island.

³ Median personal income figures do not correct for changing dollar values. 'Median' means middle and so indicates there are as many people with incomes above that figure as there are with incomes below it. Incomes measured at household or family level would obviously be different.

⁴ Number of community residents employed in mining does not record those employed from that community who have moved since being employed at Century Mine though successive studies have shown that this out-migration occurs.

⁵ Where numbers are provided at two different times, care needs to be taken in interpreting the change as a proportional trend since total populations and populations in the relevant age bracket (e.g. working age) fluctuate. Hence an absolute decrease in numbers may actually represent an increased proportion of the relevant population in a particular category.

Appendix 4: Socio-economic indexes for areas (SEIFA) by local government area, 2011

Shire	Burke	Carpentaria	Doomadgee	Mornington
Population	521	2052	1283	1139
Index of relative socio-economic advantage and disadvantage (IRSAD), 2011				
Score	915	865	617	669
National Rank	96	44	7	15
National Decile	2	1	1	1
National Percentile	17	8	2	3
Queensland Rank	24	17	6	9
Queensland Decile	4	3	1	2
Index of economic resources (IER), 2011				
Score	909	886	597	583
National Rank	55	49	14	9
National Decile	1	1	1	1
National Percentile	10	9	3	2
Qld Rank	22	19	10	7
Qld Decile	3	3	2	1
Index of education and occupation (IEO), 2011				
Score	918	895	808	914
National Rank	102	45	9	96
National Decile	2	1	1	2
National Percentile	19	8	2	17
Qld Rank	29	15	8	28
Qld Decile	4	3	2	4

Notes:

Though the highest possible value varies for each of these measures, in all cases a higher number indicates a better situation.

- The total number of local government areas is 564 (with rank 1 lowest and 564 highest).
- Percentiles are reported from lowest (1) to highest (100).
- Deciles, similarly, are from lowest (1) to highest (10).

Three indexes are reported above:

- **IRSAD** summarises variables that indicate either relative socio-economic advantage or disadvantage. IRSAD scores range from a low, representing considerable disadvantage, of 300 to around 1250 as the relatively most advantaged. National average is 1000.
- **IER** focuses on the financial aspects of relative socio-economic advantage and disadvantage.
- **IEO** summarises variables related to educational qualifications and vocational skills.

Appendix 5: Other relevant forums and programs

There is a complex network of organisations and agencies operating at local, regional, state and national levels that have developed multiple plans, strategies and projects that tap into the various grants and funds available. However, this multiplicity can result in a piecemeal focus on specific areas, on symptoms rather than causes of problems, and on activities rather than longer-term outcomes. MMG-Century can therefore play a more active role as a ‘regional citizen’, by collaborating with a range of other players in ways that harness the complementary skills of different groups and develop the capacity of those who will remain post-production. MMG should work closely with local Shire Councils as they undertake their own community planning processes in the context of Century’s projected reconfigurations. Closer collaboration with State Government departments and working with regional groups to leverage State and Federal programs will also help to better prepare the region for the transition to closure and mitigate negative impacts.

Future efforts by MMG-Century to contribute to regional development should, where possible, be consistent with these other plans and strategies, in particular with those that pursue common objectives and that were developed using rigorous studies and extensive community consultation processes and therefore have legitimacy and ownership already and can assist in identifying strategic partners and their roles and responsibilities. Indeed, some of these plans identify a role for MMG-Century. Wherever possible the many strategies should be coordinated and will benefit from the resources, skills and expertise of the mining sector in general and Century in particular. For example Century’s leading practice in water monitoring, weed management and native revegetation to meet EPA licence conditions can support regional natural resource management plans. MMG-Century should therefore aim to collaborate with these existing forums and programs in the interests of achieving maximum synergies and of supporting regional self-reliance. Table A5.1 provides brief details of some of the pertinent plans and strategies and compares these to the Gulf Communities Agreement (GCA) which continues to provide a framework of aspirations for Century’s regional development initiatives. Even in cases where implementation of a plan is well under way there may be a role for MMG-Century community investment in assisting to bring outstanding items to fruition.

Table A5.1 Comparison of relevant regional plans and GCA

	Doomadgee LIP	Mornington Island LIP	Gulf Savannah Development (est. 1975)	Southern Gulf Catchments NRM Plan	Gulf Regional Development Plan	Carpentaria Land Council	RDA Townsville and NWQld	MITEZ N-W Strategic Development Strategy	GCA
What shires are covered?	Doomadgee	Mornington Island	Burke Doomadgee Carpentaria Etheridge Mornington	Burke (100%), Carpentaria (29%), Cloncurry (78%),	Burke Mornington Doomadgee Carpentaria Croydon	Carpentaria Native Title Determination Area. For Economic	Boulia Burdekin Burke Carpentaria Charters	Seven local government areas - Mount Isa, Cloncurry, Mckinlay,	Burke Mornington Doomadgee Carpentaria

Website	Aboriginal Shire Council; COAG Remote Service Delivery National Partnership; National Partnership Agreement on Remote Indigenous Housing	Council; COAG Remote Service Delivery National Partnership; National Partnership Agreement on Remote Indigenous Housing	http://www.dss.gov.au/our-responsibilities/indigenous-australians/publications/articles/communities-regions/local-implementation-plans/working-together-towards-a-better-future-in-doomadgee	http://www.gulf.com.au/home.html	Deputy and representatives of seven 'sectors': Pastoral; Mining; Other Industries; Local Gov't; Aboriginal Peoples; General Community; Conservation	(GSD) as project manager; 2 from each Gulf Local Gov't and Aboriginal Community Councils; four State Gov reps (from Regional Managers Forums); a Federal Gov rep; a rotating rep of the 3 Aboriginal Land Councils; an ATSI delegate	Kaiadilt, Yangkaal, Kukatj, Kurtjar, Gkuthaarn, and Waanyi; State Dept of Environment and Heritage Protection; Federal Dept of Families, Housing, Community Services and Indigenous Affairs FaHCSIA	http://www.rdanwq.org.au/	State Government departments etc.	Waanyi, Gkuthaarn, Kukatj, Mingginda
			http://www.dss.gov.au/our-responsibilities/indigenous-australians/publications/articles/communities-regions/local-implementation-plans/working-together-towards-a-better-future-in-mornington-island	http://www.southernregion.com.au/		http://www.dsip.qld.gov.au/regional-planning/gulf-region.html	http://www.cicac.com.au/	http://www.mitez.com.au/index.php	http://www.atns.net.au/agreement.asp?EntityID=446	

Appendix 6: Guidelines for preparing mine closure plans

Yes	Checklist	No
✓	Does the closure plan represent specific socio-economic characteristics of the Lower Gulf Region and population?	X
✓	Is stakeholder engagement documented in the plan for the full range of affected people?	X
✓	Have community profiles been considered and stakeholder consultations undertaken to identify potential closure issues?	X
✓	Have appropriate closure outcomes been defined for the site and the workforce that detail specific land uses, economic diversity, levels of social, human etc capital?	X
✓	Have potential closure risks and issues been identified?	X
✓	Are workable management measures under consideration or in place to address those issues?	X
✓	Are there appropriate plans for progressive rehabilitation, closure monitoring and maintenance?	X
✓	Are there systems in place for employee placement, retraining or upskilling?	X
✓	Are good relations established between the mine, council and other relevant local groups?	X
✓	Are negotiated transition plans in place for key committees and boards – especially those associated with the GCA?	X
✓	Have contracting and supply procedures been reviewed in light of changing needs?	X
✓	Have discussions been held with key contractors, service-providers and regional businesses?	X
✓	Are options and scenarios being developed for various sites and various likely futures?	X
✓	Is there training/ capacity building underway to ensure a suitable core of workers with vital community engagement skills and environmental management skills?	X
✓	Have a range of effective and relevant community forums, local NGOs and community organisations been identified as potential partners?	X
↓		↓
Yes to all? <i>Your closure plan may be adequate</i>		No to any? <i>Your closure plan is likely to be inadequate</i>

Appendix 7: Integrating closure into management systems

Have you integrated closure into your other management systems in ways that allow you to track and report on closure-related planning, actions and considerations? The following table provides a ready checklist. The main systems operating should be listed in the left hand column with a check to indicate whether it does address the closure situation and a brief description in the right hand column of how this occurs. The first few items have some examples of ways you might describe the aspects of the system that are relevant to closure.

System	Check ✓ or X	Description of relevant elements
Complaints/ grievance mechanisms		e.g. Captures feedback or grievances relating to long-term legacy or closure-related activities from engagement with Gulf communities and details how stakeholder concerns have been addressed.
Management team meeting agendas		e.g. Closure planning activities are shared across teams regularly at management team meetings.
CSP team meeting agendas		e.g. accounts for social closure-related news, updates and issues and ensures these are shared with the team in a timely manner.
Social Risk Assessments		e.g. capture and assess social risks associated with decommissioning, closure and exit of company.
Risk register		
Social Impact Assessment		
Social Impact Management Plan		
Commitments register		
Monitoring		
Closure Plan		
Social completion criteria		

Appendix 8: Meeting ICMM Commitments

ICMM Principle	POSSIBLE MMG ACTION
1. Implement and maintain ethical business practices and sound systems of corporate governance.	<p>Comply with or exceed the requirements of Queensland laws, regulations and lease conditions.</p> <p>Work, through regional and other forums, with governments, industry and other stakeholders to maximise the mine's contribution to sustainable development of the region.</p> <p>Demonstrate accountability to local communities and especially Native Title Groups by reporting regularly through recognised channels.</p>
2. Integrate sustainable development considerations within the corporate decision-making process.	<p>Operate and close the operation in a manner that enhances sustainable development.</p> <p>Provide sustainable development training to ensure adequate competency at all levels among employees and contractors (at this stage, training should focus on sustainable environmental management and also community development practices).</p>
3. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.	<p>Ensure that all relevant staff and contractors are provided with appropriate cultural training and guidance through maintaining a cultural awareness program.</p> <p>Compensate fairly for adverse effects on the community where they cannot be avoided.</p> <p>Respect the culture and heritage of local communities, including Indigenous Peoples.</p>
4. Implement risk management strategies based on valid data and sound science.	<p>Consult with interested and affected parties in the identification, assessment and management of all significant social, environmental and economic impacts associated with closure activities.</p> <p>Ensure social risks are included in risk management systems and regularly reviewed and updated (see sample in Table 13)</p> <p>Inform potentially affected parties of significant risks during the transition to closure and work with them to design ways to manage the potential risks effectively and achieve mutually satisfactory closure goals.</p>
5. Seek continual improvement of our health and safety performance.	<p>Consider appropriate innovations and adjustments to practices and procedures to ensure the health and safety of employees, contractors and the communities during transition to closure and beyond. Give special consideration to flexible measures to facilitate safe access to significant sites and traditional lands and transition to post-mining land uses in sections of the lease area.</p>
6. Seek continual improvement of our environmental performance.	<p>Assess the positive and negative, the direct and indirect, and the cumulative environmental impacts of the project right through to lease relinquishment.</p> <p>Rehabilitate land disturbed or occupied by operations in accordance with post-mining land uses that are negotiated and 'owned' by relevant stakeholder groups notably Native Title Groups, local governments and natural resource management bodies.</p> <p>Provide for safe storage and disposal of residual wastes and process residues.</p> <p>Provide adequate resources to meet the closure requirements of the operation.</p> <p>Involve CEC, local employees and native title holders as much as possible in the whole range of environmental management tasks.</p>
7. Contribute to conservation of biodiversity and integrated approaches to land use planning.	<p>Respect designated protected areas and encourage endemic flora and fauna.</p> <p>Disseminate scientific data on and promote practices and experiences in biodiversity assessment and management (building capacity in regional land managers and potential future managers of the lease site).</p> <p>Support the development and implementation of scientifically sound, inclusive and transparent procedures for integrated approaches to land use planning,</p>

	biodiversity and conservation, working with CEC, Indigenous Rangers, Southern Gulf Catchments and other environmental groups in a coordinated way and adopting participatory monitoring and other community involvement strategies where feasible.
8. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.	Promote the concept of integrated materials management and specifically the re-use, recycling and responsible disposal not just of products and by-products but also of the machinery and infrastructure of the operation. Facilitate future in-region (re)use of infrastructure where suitable arrangements for transfer and maintenance can be negotiated
9. Contribute to the social, economic and institutional development of the communities in which we operate.	Engage at the earliest practical stage with likely affected parties to discuss and respond to issues and conflicts concerning the management of cumulative social impacts or social impacts associated with closure. Ensure that appropriate systems are in place for ongoing interaction with affected parties, making sure that small and marginalized groups have equitable and culturally appropriate means of engagement. Contribute to community development throughout closure transitions in collaboration with host communities and their representatives. Partner with governments, non-governmental organizations and community organisations to support the effective delivery of programs (such as community health, education, local business development) that are well designed. Enhance social and economic development by seeking opportunities to address poverty and disadvantage.
10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.	Use existing forums and channels of communication including Century Community Forum (CCF), Jabiru newsletter and GADC regularly. Report frequently and openly on economic, social and environmental performance and contribution to sustainable development. Provide information that is timely, accurate and relevant. Engage with and respond to stakeholders through open consultation processes. Involve local Aboriginal people and other relevant regional stakeholders in planning, implementing and monitoring progress towards closure goals. Canvas options widely as a basis for involvement in decision-making. Design engagement activities ⁵ to build the capacity of stakeholders and empower them to action in partnership as well as to take initiatives independent of the company. The approaches used should span the full spectrum of participation as outlined by IAP2: informing, consulting, involving, collaborating and empowering (see FigureA8.1).

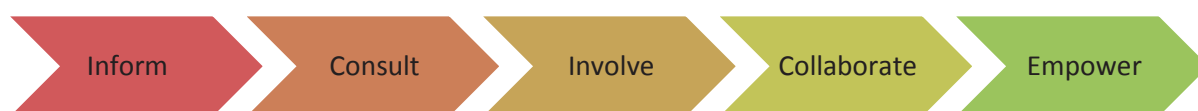


Figure A8.1: Public participation spectrum (IAP2, 2006)

⁵ See **Appendix 9** for key components of stakeholder engagement and reference to useful resources

Appendix 9: Improving stakeholder engagement

The IFC Good Practice Handbook on Stakeholder Engagement (2007) identifies the following as key components of engagement.



(Source: Adapted from

http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/publications/publications_handbook_stakeholderengagement_wci_1319577185063 p.12).

This Handbook has a section (p. 151-158) devoted to specifics of engagement during downsizing decommissioning and divestment

Another recommended source is World Resources Institute (2009) *Breaking Ground: Engaging Communities in Extractive and Infrastructure Projects* available at

<http://www.wri.org/publication/breaking-ground>

Appendix 10: Determining social objectives for closure

Determining social objectives for closure (adapted from ICM Planning for Integrated Mine Closure Toolkit p. 65-66)

	<i>What is likely to be the cumulative impact of mining?</i>	<i>What must be protected?</i>	<i>What can be enhanced?</i>	<i>Potential post-mine alternative uses consistent with overall site closure objectives, legal requirements and agreements or undertakings</i>	<i>Objectives (desired legacy or resource endowment)</i>	<i>Available resources to help achieve successful closure and a positive legacy</i>
Infrastructure and built assets						
Settlement Patterns						
Transport networks						
Water supply						
Power and energy						
Telecommunications						
Educational facilities						
Health facilities						
Housing stock						
Community infrastructure						
Social capital and networks						
Household composition						
Community Groups						
Community Organisations						
Social cohesion/divisions						
Levels of crime and violence						
Culture and heritage						
Indigenous People						
Partner institutions						

Financial or economic assets									
Land Tenure Systems									
Land Use									
Livelihoods and income streams									
Industrial production									
Agricultural production									
Per capita income									
Employment rates and patterns									
Fishing industry									
Human capital									
Languages									
Literacy and numeracy									
Vocational skills and capacities									
Health status (chronic diseases)									
Maternal health and infant mortality									
Mental health									
Natural and environmental assets									
Water resources									
Air quality									
Grazing land									
Cropping land									
Forests									
Endangered species									
Wetlands									
Cultural Heritage sites									

